Using the Adult Classroom Environment Scale to Determine Developmental Focus for Online Course Instructors

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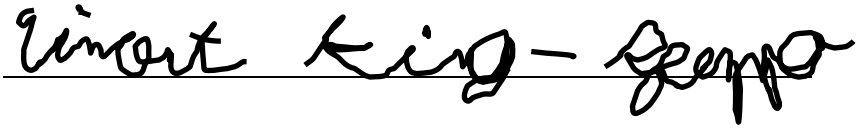
Signature 

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ABSTRACT

The purpose of this study was to discover what design elements students preferred in their ideal online classroom environment that might differ from their ideal physical classroom environment and to understand what differences might exist due to the demographics of age, gender, or race. In order to best uncover those differences, I utilized an already validated measurement called the Adult Classroom Environment Scale. Participants for this study consisted of 170 students of varying ages, genders, and races from Valdosta State University. These participants were provided a survey which consisted of three demographic questions and two versions of the Adult Classroom Environment Scale; one asked for ratings based on an ideal physical classroom environment and one asked for ratings based on an ideal online classroom environment. The dimensions associated with course design, involvement, affiliation, personal goal attainment, and organization and clarity, were analyzed. According to the results, students' rated personal goal attainment significantly higher for their ideal online classroom environment ($M = 3.01$, $SD = 0.53$) than the physical one ($M = 2.70$, $SD = 0.44$); ($t(169) = -9.04$, $p < 0.001$). Additionally, female students ($M = 3.53$, $SD = 0.46$) rated organization and clarity significantly higher than male students ($M = 3.28$, $SD = 0.67$); [$F(2,167) = 3.81$, $p = 0.024$]. Finally, it was found that White students ($M = 3.09$, $SD = 0.56$) rated affiliation significantly higher than Other students ($M = 2.68$, $SD = 0.58$), [$F(2,167) = 3.91$, $p = 0.022$], and separately White students rated organization and clarity significantly higher than Black students ($M = 3.37$, $SD = 0.57$); [$F(2,167) = 4.46$, $p = 0.013$]. From these results, a foundation for a guide to the design of online classroom environments at Valdosta State University was established.

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This dissertation is dedicated to the memory of Dr. Joe Mitchell; a dear friend of mine who passed away on the day of my defense. He inspired me to persist when I wanted to slow down and told me of his own dissertation, "At some point you just want to be done and you feel it. You'll know. When you're ready to be done you can finish."

Chapter I

INTRODUCTION

Online distance education has seen explosive growth over the last several years despite drops in enrollment in traditional physical campuses (Allen & Seaman, 2013; Lanier, 2006). Among the various explanations for this trend of student growth in online courses, was the idea that online classes had become more popular among adult learners, individuals over the age of 18 engaged in the act of learning, who were returning to continue their education (Wlodkowski, 2008). Researchers have shown that online classes were popular among adult learners because they offered the flexibility needed to return to school while allowing for the balance of other time constraints such as family and work (Chao, DeRocco, & Flynn, 2007; Summers, Waigandt, & Whittaker, 2004; Wuensch, Aziz, Ozan, Kishore, & Tabrizi, 2008).

The increase of adult learners who returned to take online classes seemed to coincide with both increases in unemployment and widespread increases of degrees being required among available open positions; this was seen particularly in Georgia where it was estimated that over 60% of the available jobs in Georgia would require a college level degree by the year 2020 (University System of Georgia, 2011). This increase in degree requirements for open positions would not only affect those who sought new jobs, but also those already holding jobs who were looking to move up to a higher position. To help keep a workforce in Georgia able to fulfill this predicted demand in college degreed

labor, several universities in the University System of Georgia committed to creating new online offerings and expanding existing ones (University System of Georgia, 2013). Between the increased need for a degree to obtain a job, the need for flexibility to complete a degree while balancing other time commitments, and the increased commitment to provide more online courses by various universities it stood to reason that the continued influx of students in Georgia universities would result in continued growth in the demand for online classes.

With a continued growth in the need for online courses comes a need for more instructors who are qualified to design online courses and teach online; however, this is not as easy as just taking a physical class and duplicating it online as there exists key differences between the physical classroom environment, where instructionally designed learning takes place, and its' online counterpart (Allen & Seaman, 2013; Darkenwald, 1989; Lanier, 2006; Trickett & Moos, 1974). The differences between physical and online classes has been the subject of a vast amount of research, but generally researchers have agreed that the multitude of differences between the two dictate the need for a pedagogical shift when an instructor moves from designing and teaching a physical class to designing and teaching an online course (Gonzalez, 2012; Horspool & Lange, 2012; Moore, 1989; Moore, 1997; Williams & Peters, 1997; Young & Duncan, 2014). Some researchers even argued that designers for online courses not only needed to consider how online was different from a physical classroom, but that they also needed to consider the differences required for online students and how, even among just online students, differences in age, gender, and race resulted in different needs and preferences for an online course (Ashong & Commander, 2012; Ausburn, 2004; Garland & Martin, 2005).

Specifically, Ausburn (2004) reported that adult learners have needs and preferences that are different from other online students and needed to be accounted for in the design and facilitation of an online class. This need to incorporate aspects specific to online students of particular demographics added to the already vast design considerations that needed to be contemplated while transitioning a physical course to the online environment. The necessity to shift the way in which online classes are designed for adult learners has a strong parallel to the research of Darkenwald and Valentine (1986) who noted a lack of attention to adult learners in educational research on the social environment of the classroom.

Due to the striking similarities and historical context of the issues addressed by Darkenwald (1989), the theoretical framework of this study was based on the various research conducted by Darkenwald who recognized the classroom as an environment that served an important role in learning and shaping the collegiate roles of adult learners. In an effort to evaluate the classroom environment of adult learners, Darkenwald (1989) developed the Adult Classroom Environment Scale which measured seven different dimensions of the classroom environment: teacher support, task orientation, student influence, involvement, affiliation, personal goal attainment, and organization and clarity. Darkenwald produced two nearly identical versions of the Adult Classroom Environment Scale for use in his study; in one version, adult learners were asked to rate items based on their perception of a class they were currently taking, which was used as a measure of the actual classroom environment the adult learners were currently engaged with, and in the other version adult learners were asked to rate the same items based on their ideal classroom environment instead of one they were currently taking. This was done in order

to determine what the adult learners wanted from their classroom environment and what they perceived they were currently receiving (Darkenwald, 1989). This scale seems like it would easily be used with an online classroom environment to help determine what the differences are between the ideal and actual online classroom environment being experienced by adult learners, however, there has been a lack of research on using the scale in this specific manner.

Although there was a lack of research regarding usage of the Adult Classroom Environment Scale for studies of online classes, some researchers like Freddolino and Sutherland (2000) utilized the scale with other forms of distance education. In Freddolino and Sutherland's study, they used a modified version of the Adult Classroom Environment Scale to determine if there were any differences in student's perceptions of an on campus classroom environment and their perceptions of the same classroom environment provided at a distance via video based instruction. In their study, Freddolino and Sutherland reported there was not a significant difference in student perceptions of the classroom environment regardless of whether students were on site or received instruction at a distance via video. While they did not find a difference, Freddolino and Sutherland recommended future researchers attempt to replicate their study using other variations of distance education.

Statement of the Problem

If useable for the online environment, Darkenwald's Adult Classroom Environment Scale would prove very beneficial for measuring the difference between what adult learners wanted from an online classroom environment and what they actually received. This information would be vital to instructors who wanted to improve their

online course or redesign it to take into consideration the specific needs of adult learners. However, using the Adult Classroom Environment Scale in a review of an online class limited its use to courses that already existed. While improving courses that already existed was also important, the concern faced at the time of this research was the existence of an increased need to swiftly place courses online for adult learners that had never been converted to an online format. As an added complication, there was a shortage of available instructors who were well versed in online course design to create these online courses with adult learners' needs in mind. So the issue to be addressed involved finding a way to quickly provide training for faculty on how to design online courses that would meet the needs of adult learners.

Rather than treat instructors as neophytes and simply provide a comprehensive training on online course design, the quickest method of training instructors who had already designed classes for the physical classroom, would have been to simply provide training that focused on the differences between what adult learners wanted from their physical classroom environment and what they wanted in their online environment. The dilemma was that at the point of this research there has been very little research into the utilization of the Adult Classroom Environment Scale with distance classroom environments provided via an online format; so there was little information as to what the differences might be between adult learners' ideal environment in a physical classroom and in an online classroom. The specific problem that this research attempted to uncover was what, if any, differences existed between adult learners' ideal physical classroom environment and their ideal online classroom environment.

Purpose of the Study

Due to the differences between traditional physical classes and online classes in other areas, it was reasonable to expect there would be differences in what adult learners' ideal physical classroom environment would be and what their ideal online classroom environment would be (Gonzalez, 2012; Horspool & Lange, 2012; Moore, 1989; Moore, 1997; Williams & Peters, 1997; Young & Duncan, 2014). The purpose of this study was to discover what, if any, differences would exist on adult learners' rating of their ideal online classroom environment and ideal physical classroom environment.

Research Questions

The specific research questions I attempted to address in this study were:

1. Is there a significant difference between adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity?
2. To what extent is there a significant relationship between adult learners' age (young adults ages 18-24, working-age adults ages 25-64, and older adults ages 65 and older), gender, race, and adult learners' perceptions of an ideal online classroom environment as measured on the Adult Classroom Environment Scale?

Definition of Terms

Adult Learners. The focus of this study was on adult learners. For the purposes of this research, adult learners were operationally defined as current or recent students engaged in the process of learning who were aged 18 or older. Adult learners were further classified into three distinct age-based groups as influenced by the research of

Wlodkowski (2008) who grouped adult learners as either; young adults with ages 18-24, working-age adults with ages 25-64, and older adults with ages 65 and older. Further demographic information, such as gender, and race, were also collected for analysis as the research suggested that additional differences may also have been found within the various sub-groups of Adult Learners (Ashong & Commander, 2012; Ausburn, 2004; Garland & Martin, 2005).

Classroom Environment. Another key term used in this study was classroom environment. For this study, classroom environment was defined as the social environment where instructionally designed learning takes place and teacher to student, student to teacher, and student to student interactions occur (Darkenwald, 1989; Trickett & Moos, 1974). In this study there were two types of classroom environments discussed; physical classroom environments and online classroom environments.

Physical Classroom Environment. Physical classroom environments are classroom environments that exist in a physical real world location with the majority of interactions occurring face-to-face.

Online Classroom Environments. Online classroom environments are classroom environments that exist in a virtual location with the majority of interactions occurring over the internet.

Adult Classroom Environment Scale. The final key term is the Adult Classroom Environment Scale. The Adult Classroom Environment Scale was the tool used to measure adult learners' perceptions of their ideal and actual classroom environment on seven different elements that make up a classroom environment (Darkenwald & Valentine, 1986).

In my research, the Adult Classroom Environment Scale was utilized in a two-form manner similar to that used by Darkenwald (1989); however instead of asking adult learners about their ideal versus real perceptions of a classroom environment, the two-form questionnaire used in this study instructed adult learners to base ratings on their ideal physical classroom environment on one version and their ideal online classroom environment on the other version. Just as Darkenwald used his two versions of the Adult Classroom Environment Scale to compare and find the differences between adult learners' perceptions of an ideal classroom environment and one they were actually taking; this research allowed for the comparison and discovery of the differences between adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment.

This was similar to the research conducted by Freddolino and Sutherland (2000) where they applied the Adult Classroom Environment Scale to both a physical group of students in their class and a group at a distance via video, group of students in the same class. In both their study and this study, the goal was to find the differences in the Adult Classroom Environment Scale ratings between the physical classroom and the at a distance classroom. However, where Freddolino and Sutherland found that there was not any significant difference between ratings; the previous research on physical versus online classroom environments suggests that differences would have been discovered (Gonzalez, 2012; Horspool & Lange, 2012; Moore, 1989; Moore, 1997; Williams & Peters, 1997; Young & Duncan, 2014).

One additional change that occurred in this study, with regards to how the Adult Classroom Environment Scale was used by Darkenwald, deals with the dimensions that were used. In Darkenwald's (1989) research, he focused on all seven dimensions of the Adult Classroom Environment Scale which included teacher support, task orientation, student influence, involvement, affiliation, personal goal attainment, and organization and clarity. Since the purpose of this research was to uncover the differences in the design of a physical and an online classroom environment, only those four dimensions associated with design, as opposed to facilitation, were used. Specifically, those included were the dimensions of involvement, affiliation, personal goal attainment, and organization and clarity. In this study: affiliation was defined in terms of collaborations and interaction from a student to student perspective; the definition of involvement was concerned with class activities and focused on the student's participation, satisfaction, and attentiveness during activities; personal goal attainment was defined in relation to flexibility and the ability to provide individualized opportunities for students to incorporate their own personal interests; and, organization and clarity was simply defined from the student perspective of how well class activities and instructions were organized (Darkenwald & Valentine, 1986). The three dimensions not included were teacher support, task orientation, and student influence; these were left out because they were viewed as dealing more with how the class was facilitated rather than what would need to be designed ahead of time.

Chapter II

LITERATURE REVIEW

Introduction

The overall purpose of this study was to discover differences that may exist between what students in a given population wanted in their ideal physical classroom environment and what they wanted in their ideal online classroom environment. In order to best discover these differences and frame the study around the classroom environment, I decided early on to utilize the Adult Classroom Environment Scale created and used by Darkenwald as it was established as a validated means to measure the Adult Classroom Environment in the physical environment (Darkenwald & Valentine, 1986). In the exploration of literature related to the online classroom environment, the focus was first placed on the Adult Classroom Environment Scale since understanding the formation and usage of the instrument were vital to forming the lens through which to view the rest of the literature related to classroom environments of both a physical and online nature. The first part of the literature review begins with an explanation of the creation, validation, and history of the Adult Classroom Environment Scale by Darkenwald and his fellow researchers. Afterward, I provide a discussion of how other researchers utilized the Adult Classroom Environment Scale and what changes were made to allow the scale, which was originally designed to measure a physical environment, to serve as a means for the

study of differing environments and situations including its adoption for environments outside of the physical classroom.

Once the framework for the Adult Classroom Environment Scale was established and it was easier to understand the idea of a classroom environment and how it was studied, I began to explore what general differences existed between the physical and online classroom environment getting into more specifics as it progressed through the various research. Afterward, I examined the differences between facilitation and design of an online classroom environment and then shifted back toward the discussion of the Adult Classroom Environment Scale by exploring the limited research that had been conducted utilizing the Adult Classroom Environment Scale to measure such environments. Then I moved into the specific dimensions of the Adult Classroom Environment Scale related to design and explored the importance of each item. Finally, I ended the literature review with an exploration of the influence that various student demographics had on course design preferences and concluded with a short summary.

Development of Adult Classroom Environment Scale

The theoretical framework at the heart of this study was based on the foundational work of Darkenwald (1989) on developing a method to evaluate and better understand the relationship between the classroom environment and adult learners. Darkenwald (1989) understood the importance of the learning environment on education and advocated that there existed optimal conditions for a given learning environment that would better foster learning for adult learners. In an effort to evaluate and improve the classroom environment of adult learners, Darkenwald developed the Adult Classroom Environment Scale based on a previously created Classroom Environment Scale.

The Classroom Environment Scale that would become the basis for the Adult Classroom Environment Scale was developed through the research of Trickett and Moos (1974). The Classroom Environment Scale was originally designed to focus on high school aged students and utilized a 90-item true-false formatted survey that measured nine different subscales which included Innovation, Involvement, Affiliation, Competition, Rule Clarity, Task Orientation, Order and Organization, and Teacher Support and Teacher Control (Trickett & Moos, 1974). After validating their scale with a sample of 465 students across 22 classrooms in the United States, Trickett and Moos (1974) began to use the scale in studies to demonstrate relationships between student outcomes and student perceptions on the Classroom Environment Scale.

The Classroom Environment Scale was used as a successful means to study classroom environments for several years, but as Darkenwald and Valentine (1986) realized, this research had omitted any investigation into the learning environment of adults. After noticing the absence of research on the adult learners' classroom environment, Darkenwald and Valentine further realized that the Classroom Environment Scale had not even been validated for adult learners, so they set about to create what would become the adult learner Classroom Environment Scale. Whereas the Classroom Environment Scale was designed to focus on high school aged students, the Adult Classroom Environment Scale instead focused on adult learners in college level for credit courses (Darkenwald, 1989; Trickett & Moos, 1974).

In the development of their scale Darkenwald and Valentine (1986) created a pool of items by reviewing other environmental scales such as the Classroom Environment Scale, conducting semi-structured interviews of 35 adult learners and 28 instructors of

adult learners, and by brainstorming additional items. After culling the initial pool for duplicates and unsuitable items, Darkenwald and Valentine presented a pool of 159 items to a panel of adult education experts who reduced the items to a manageable size of 89 items. Those 89 items fit the adult learning environment into a system that included three distinct elements, teacher-student interactions, student-student interaction, and teacher behavior, and seven different dimensions: teacher support, task orientation, student influence, involvement, affiliation, personal goal attainment, and organization and clarity (Darkenwald & Valentine, 1986).

These seven measurement subscales that Darkenwald and Valentine (1986) created were defined in broad terms. Teacher support was defined in terms of the encouragement or help offered to the student by the instructor during class (Darkenwald & Valentine, 1986). Task orientation was another teacher-student related measure and was defined in terms of teacher and student valuing of staying focused on and completing tasks (Darkenwald & Valentine, 1986). Student influence was defined as the level of student-teacher collaboration during course planning and class decisions (Darkenwald & Valentine, 1986). Similarly, affiliation was defined in terms of collaborations and interaction, but from a student to student perspective (Darkenwald & Valentine, 1986). The definition of involvement was concerned with class activities and focused on the student's participation, satisfaction, and attentiveness during activities (Darkenwald & Valentine, 1986). Personal goal attainment was defined in relation to the teacher's ability to be flexible and provide individualized opportunities for students to incorporate their own personal interests (Darkenwald & Valentine, 1986). Finally, organization and clarity

was simply defined from the student perspective of how well class activities and instructions were organized (Darkenwald & Valentine, 1986).

This initial version of the Adult Classroom Environment Scale was given to 220 adult learners from a variety of environments; from the feedback of this initial group and a standard item-analysis, Darkenwald and Valentine (1986) further reduced the number of items to 49; seven items for each of the seven dimensions. From these remaining 49 items Darkenwald and Valentine created three nearly identical forms of the Adult Classroom Environment Scale which only differed in instruction and intended respondent; one form instructed the student to respond based on their ideal learning environment, one form instructed the student to respond based on their actual learning environment, and the other form instructed the teacher to respond based on their actual learning environment. The respective forms were then provided to 308 students and 16 instructors from a credit-bearing program for adults, 156 students and 5 instructors from an evening M.B.A. program at a large state university, and 266 students and 25 instructors enrolled in personal enrichment or vocational classes from a community adult school (Darkenwald & Valentine, 1986). From the responses, Darkenwald and Valentine were able to provide evidence of subscale reliability through the computation of Cronbach's alpha for each subscale, which ranged from acceptable (.58) to high (.89), and evidence of discriminate validity, meaning the subscales were not measuring the same things, by examining the intercorrelations among the seven subscales, which ranged from low (.20) to moderate (.55) and had a mean of 37. Additionally, they included two items on the forms to serve as a check for concurrent validity; one asked if the respondent was satisfied with the class and the other asked if they felt the class had successfully

taught them (Darkenwald & Valentine, 1986). They found that the subscale items; teacher support (.70), task orientation (.51), student influence (.74), involvement (.71), affiliation (.49), personal goal attainment (.60), and organization and clarity (.68), had a significant correlation at or beyond the .001 level with both the satisfaction and success the classroom environment items and thus showed evidence to validate the Adult Classroom Environment Scale as a measure of adult learners' environment (Darkenwald &238Valentine, 1986). Once established as a valid measure of an adult classroom environment, Darkenwald continued to use the Adult Classroom Environment Scale in a variety of studies on adult education including research into social environment of adult classrooms, research about how to enhance the adult learning environment, research about adult learners' dropout rates, research on adult gender differences in classroom environment differences, and even research on how the presence of adult learners in a classroom environment can affect the average class performance (Beer & Darkenwald, 1989; Darkenwald, 1989; Darkenwald & Gavin, 1987; Darkenwald & Novak, 1997).

Adult Classroom Environment Scale Adoption by Other Researchers

Darkenwald's Adult Classroom Environment Scale was eventually adopted by other researchers as it was viewed not only as a reliable instrument for use with adult learners in general, but it was also widely considered one of the only validated measurements for the adult classroom environment at the time (Langenbach & Aagaard, 1990). Since its creation, several other researchers have utilized the Adult Classroom Environment Scale, or a modified version of it, to conduct studies on adult learners and continue to do so even to present day.

Some researchers like Bartholomay (1996) utilized the scale in the same manner as Darkenwald, which was to measure and compare the students' perspectives with that of the instructors. Bartholomay used the scale to identify needed changes in the classroom environments of a developmental course provided at various Virginia community colleges. In her study, Bartholomay administered both the ideal and the actual versions of the Adult Classroom Environment Scale to students and instructors in the chosen community college classes just as Darkenwald had initially conducted his own research. This research identified those areas where students' and instructors' perceptions were significantly different; in this case, those were all subscales with the exception of Task Orientation, (Bartholomay, 1996). This usage of the Adult Classroom Environment Scale aligned with the reason for the original creation of the scale and thus used the scale in the way it was originally intended, which seemed to be the way that many researchers commonly used the scale.

Slight variations to Darkenwald's original methodology were not uncommon as well; such as Rowbotham (2010) who used the scale to compare the differences between nursing students' and nursing instructors' classroom environment perceptions. Rowbotham still provided the Adult Classroom Environment Scale to the nursing students in order to obtain their perspective on the classroom environments in the nursing program, but instead of providing the nursing instructors with the same scale, they choose instead to measure the instructors' perceptions with the Instructional Perspective Inventory. While two separate scales were used, both contained similar subscales and this still allowed for the comparison between how instructors and students perceived the classroom (Rowbotham, 2010). Rowbotham reported that instructors with a high rating

on the Instructional Perspective Inventory subscale of teacher responsiveness often had students rating the actual environment highly on the subscales of teacher support, organization and clarity, involvement, and task orientation from the Adult Classroom Environment Scale. While Rowbotham's study utilized only part of the Adult Classroom Environment Scale, its overall research purpose, and use stayed within the bounds of Darkenwald's original study.

Eventually adult learner researchers, like Miglietti and Strange (1998), began using the Adult Classroom Environment Scale in ways that expanded beyond the initial ideas of just measuring the differences between instructor's and student's perceptions of a classroom. In Miglietti and Strange's exploration on the impact of teaching styles on adult learners, they focused on using the Adult Classroom Environment Scale to increase the understanding of the various interactions present in the classrooms utilizing differing pedagogical techniques. In Miglietti and Strange's study, both the ideal and actual forms of the Adult Classroom Environment Scale were given to students over the age of 24 (n = 61) as well as students 24 years old or younger (n = 95) who were labeled as needing remedial assistance by a standard placement test. In addition to the Adult Classroom Environment Scales, student participants were also given an Adaptive Style Inventory to measure their learning style and the course instructors (n = 10) had their teaching style assessed with the Principles of Adult Learning Scale (Miglietti & Strange, 1998). Although Miglietti and Strange's research yielded significant results that indicated that leaner-centered teaching approaches were most effective for the remedial learners, Miglietti and Strange noted there was not a significant correlation between the learner's age and their learning style preference. These findings seemed to indicate, at least with

regard to learning style preferences, there may not always be a difference between adult and non-adult learners; this seemed to run counter to Darkenwald's (1989) belief that adult learners needed completely separate measures to be fully understood or researched.

Another common usage of the Adult Classroom Environment Scale in research is to help prove the effectiveness of new teaching techniques or tools and to examine what impact they have on adult learners. In one such study, Kelly and Bronstein (2003) utilized the Adult Classroom Environment Scale, alongside the Kirk-Rosenblatt Research Inventory and the Teacher Evaluation Form, to measure the impact that providing feedback folders would have on adult learners in their course. In their study, Kelly and Bronstein randomly assigned one of the two sections of a course they were teaching to either the treatment group or a control group. In the treatment group, students were given a folder in which each class period they were provided a feedback sheet where they could write and submit feedback about the class to the instructor (Kelly & Bronstein, 2003). For the control group, Kelly and Bronstein had students taught in the same manner as the treatment group, but students did not receive any feedback folder system. While the results showed there was a significant increase in the average grade of the students who received the treatment ($t44 = 2.01$, $p < 0.05$), they did not find a significant difference on any of the other scales (Kelly & Bronstein, 2003). In their discussion, Kelly and Bronstein labeled this as a failure because they expected that utilizing the folder feedback system would result in higher ratings on the Adult Classroom Environment Scale in areas such as Teacher Support and Student Influence. While they viewed the folder system as a failure because it did not increase adult learners' perceptions of the instructors, one could easily argue the fact that increased student grade averages means that it is somewhat

successful; further the lack of difference between the two sections scores on the Adult Classroom Environment Scale shows that inclusion of the folder system did not negatively affect adult learners' perceptions. While more often used to see if a tool or method positively increases adult learners' perceptions, one could easily use the Adult Classroom Environment Scale as a means to simply ensure that an added teaching technique does not negatively impact adult learners' perceptions just as Kelly and Bronstein discovered in their study. In this way, sometimes not seeing a change between the two group's scores could be considered a success.

In addition to showing the common reason why the Adult Classroom Environment Scale is used, the Kelly and Bronstein (2003) study also highlighted a common way in which the Adult Classroom Environment Scale has been altered for research; in their study they only provided the scale to students and only used the version of the form meant to measure the actual environment students were in and did not administer the ideal measure. This method seemed to help expose the differences in the actual perceptions of students in the different treatment groups and many other researchers, such as Freddolino and Sutherland (2000), have also adopted this manner of using the Adult Classroom Environment Scale for use in their own studies.

Unlike Kelly and Bronstein (2003), Freddolino and Sutherland (2000) were actually looking for student ratings on the Adult Classroom Environment Scale to remain the same and show no significant difference between the two studied groups. In their study, Freddolino and Sutherland used the modified version of the Adult Classroom Environment Scale to determine if there were any differences in student's perceptions of an on campus classroom environment and their perceptions of a classroom environment

provided at a distance via video based instruction. They provided the half of the Adult Classroom Environment Scale meant to measure the actual environment to students enrolled in various Masters level Social Work courses where the courses were being taught on-campus and at a distance via video at the same time (Freddolino & Sutherland, 2000). Freddolino and Sutherland found that there was not a significant difference in student perceptions of the classroom environment regardless of whether students were on site or received instruction at a distance via video (n = 973, $F = 019$, $p = .828$). From these results Freddolino and Sutherland concluded that on-site classroom environment and the distance classroom environment were comparable to each other despite differences in student location when receiving instruction. However, Freddolino and Sutherland also recommended future research attempt to replicate their study using other variations of distance education as the results may not be the same for every method of distance education.

The study by Freddolino and Sutherland (2000) was not only important because it highlights another kind of usage of the Adult Classroom Environment Scale, but because it also dealt with the examination of adult learners' perceptions of both physical and distance learning environments. While Freddolino and Sutherland's research used the scale with early forms of distance education, such as remote location video instruction, there has been very little research on using the Adult Classroom Environment Scale in online classroom environments.

Differences Between Physical and Online Classroom Environments

It was somewhat surprising that research using the Adult Classroom Environment Scale to measure online education was not prevalent given the vast amount of research

conducted around finding the differences between the online and physical classroom environments. Most of the research on the classroom environment differences was focused on either the online environment itself or the role of the instructor in the facilitation of different kinds of classroom environments (Murphy & Cifuentes, 2001). Even though the environment for online classes were virtual and Darkenwald's (1989) work was with a physical classroom, both the environment of the classroom and the instructor's facilitation were areas that could have still been measured by the Adult Classroom Environment Scale or a slight variation of it. Despite Darkenwald's work on making a valid and reliable measure, there seems to be a lack of usage of the Adult Classroom Environment Scale in studies of online classroom environments.

Though not using the Adult Classroom Environment Scale, most research in which online and physical classroom environments have been compared, still tended to utilize some form of a survey. One such study conducted by Young and Duncan (2014), compared student rating of courses taught online with those taught in the traditional physical setting by using two slightly different versions of a student instructional report survey. In their study, Young and Duncan surveyed 6,033 physical classroom students and 2,238 online students in both graduate and undergraduate programs using either a 40-item survey for students in the physical classroom course or a 41-item version of the same survey for online students. By comparing the ratings of these two scales, they found significant differences in students' ratings between the two environments on items related to communication, grading, student effort, course outcomes, instructional methods, and faculty/student interaction; however the effect size was small (Young & Duncan, 2014). Of the significant differences in rating, only student effort was rated

higher for online than in the physical classroom environment; communication, grading, course outcomes, instructional methods, and faculty/student interaction were all rated higher for the physical classroom environment than they were for online courses (Young & Duncan, 2014). In a follow-up analysis of the rating, Young and Duncan matched data so they were comparing the same instructor and same course for the 11 pairs of courses taught both online and in a physical classroom. In the follow-up analysis, communication, grading, course outcomes, faculty/student interaction, and overall evaluation were all found to be rated significantly higher for the physical classroom course than the online course and the effect size was considered to be large (Young & Duncan, 2014). This led Young and Duncan to conclude that the differences in rating were not necessarily the result of the course content or instructor themselves, but rather the ratings were related to the differences in the environment and how instruction in the environments was presented. It was suggested that the instructors, though excellent in the physical environments, may have needed more development in transitioning their skills to the online classroom as the environments seem to require different skills and areas of instructional focus (Young & Duncan, 2014).

The conclusions that Young and Duncan (2014) arrived at through their research were consistent with that of other researchers who found, in most cases, physical classroom courses seemed to offer components that were either missing in the online environment or were not successfully replicated by course designers (Gonzalez, 2012; Horspool & Lange, 2012). In their student behavior, perception and success study, Horspool and Lange (2012) noted that despite online students spending a higher average amount of time studying than their physical classroom counterparts, it was not enough to

compensate for the in-class instruction the physical classroom students received. Horspool and Lange indicated that there was either something that occurred in the physical classroom environment that was not replicated online or there was something that was replicated poorly in the online environment. This was despite the fact that the course contained the same content, taught by the same faculty member and that communication between instructor and student was rated as high quality by both the physical classroom and online classroom students (Horspool & Lange, 2012).

Gonzalez's (2012) study followed up directly with instructors who had taught both online and in the physical classroom by asking them a series of questions in a formal interview. From these interviews, Gonzalez was able to identify primary roles that instructors were engaging in; these ranged from an information transmitter role to a role focused on communicating and collaborating with students. In examining the interview themes to explain why certain instructors took on certain roles, Gonzalez stated that the instructors who felt constrained in their online learning courses would only incorporate the minimum amount of content needed to teach the course and would utilize only the least sophisticated online learning tools. Gonzalez also noted themes of support as being highly regarded by instructors and, when support for technical usage and pedagogical concerns were present, instructors tended more towards using the online tools in a more significant way. However, Gonzalez also found that the majority of interviewed instructors overall believed that the training they received focused on the technical and not enough on the pedagogical. These findings by Gonzalez, along with those of Horspool and Lange (2012), helped shed light onto the differences found in the online environment by researchers and suggested the reason why these differences may occur

could involve the type of training instructors receive before teaching online and the online teaching roles they take on as a result of that training.

Among the research on the role differences of instructors in the online environment, several articles explored the value of instructional interactions in the online environment (Swan, 2001; Youngblood, Trede, & DeCorpo, 2001). With online classes, there seemed to have been a notion that because the instructor was not in the same room as their student, their interactions may not have been as vital as they were in the physical classroom (Swan, 2001; Youngblood, Trede, & DeCorpo, 2001).

Some research, such as that conducted by Youngblood, Trede, and DeCorpo (2001), simply established the importance of the instructor's role in online courses. In their research, Youngblood et al. conducted a study of online education classes and surveyed postgraduate students to determine whether or not they felt that the instructor's interactions had an effect on their success in their online classes. The results of Youngblood et al.'s study indicated that over 80% of the postgraduate students felt that the instructor's role in establishing an organized and clear environment was important to their success in the online classroom environment.

Further research, such as the study by Swan (2001) on course satisfaction and perceived learning, dug deeper and explored the ways in which the instructional interactions, or lack thereof, could affect the course. In her study, Swan surveyed students of the State University of New York who were enrolled in various online courses on their course satisfaction and perceived learning. Swan reported of the 1,406 students who returned the survey, 84% indicated they interacted with the instructor at least at a sufficient level; further there was a significant difference between perceived learning

($F(3,1402) = 168.25$, $p < .01$) and student satisfaction ($F(3,1402) = 188.97$, $p < .01$) with students who reported a high level of instructor interaction having also reported higher levels of perceived learning in the course and those who reported lower levels of instructor interactions also reported lower levels of perceived learning. Swan revealed a separate element that contributed to student satisfaction was course design itself. Swan found that clarity and consistency of the course design had a significant correlation with both perceived learning ($r = .474$, $p < .01$) and student satisfaction ($r = .333$, $p < .05$). Interestingly, in this case, it seemed that while instructor interaction and course design were both significant indicators of student satisfaction and perceived learning, instructor interactions were found to be more significant than the course design in determining student satisfaction. Based on these results, Swan suggested that course design and instructor interactions in the online environments should be considered as independent factors towards determining student's success and supported the argument for a separate analysis of these two seemingly integrated areas of online education.

Design Versus Facilitation of Online Courses

The separation of the course instructor and the course design factors present in Swan's (2001) study and results was not unique. Separating these two factors actually seemed fairly common place with the instructor being responsible for being the content expert and for facilitation of the course, and another individual, usually an instructional designer, being responsible for the actual design and development of the online course itself (Bates, 2005; Jeris & Poppie, 2002). Some researchers, such as Bates (2005) argued that having a separate instructional designer role better facilitated effective online courses by allowing for an individual expert to focus on choosing the right technologies

and designs to allow for concept transmission, student participation, and overall learning effectiveness while allowing the facilitating instructor to better focus on the actual learning and knowledge transfer taking place.

Other researchers, such as Jeris and Poppie (2002), came to a differing conclusion that when the roles were separated, there existed a contradictory relationship between these the role of the online course instructor and the instructional designer. In their research, Jeris and Poppie examined the belief system of instructional designers and instructors in order to determine the impact it had on the work that each role would produce. This was done through the use of artifact collection, interviews, and administration of the Philosophical Orientations of Adult Educators Inventory (Jeris & Poppie, 2002). Although they were looking for the interaction between belief systems and course actions, Jeris and Poppie also found that the instructors held a strong belief that their online courses were in conflict with their own personalities. Interviewed instructors informed Jeris and Poppie that, while they understood the need for uniformity and standardization of design, they felt that having instructional designers create the courses resulted in the need for them to adapt to the conforming design rather than express their own personal beliefs of effective instruction. At the same time, interviewed instructors told Jeris and Poppie that they believed they would not have been able to teach online without the instructional designers' support and acknowledged the importance of the instructional design process. This research gave rise to the notion that while the role of the online course instructor and the role of online course designer seemed to be separate and may best work as separate roles, they may have been better fulfilled by a single individual.

Online Classroom Research and the Adult Classroom Environment Scale

Many researchers studying the online environment tended to focus on either the technical design of the online environment or the role of the facilitating instructor (Bates, 2005; Gonzalez, 2012; Horspool & Lange, 2012; Jeris & Poppie, 2002; Murphy & Cifuentes, 2001; Swan, 2001; Young & Duncan, 2014; Youngblood, Trede, & DeCorpo, 2001). With the Adult Classroom Environment Scale's composition of both a measure of the instructor's facilitation and a course's design, it is surprising that more researchers have not yet utilized what seems to be an obviously useful measure in their research of online environments. The explanation for this seems to be a general lack of research targeting adult online learners specifically. Several studies have been conducted targeting online learners; however, the research that includes adult online learners seems to do so only incidentally and did not make it a focus of the study (Horspool & Lange, 2012; Swan, 2001; Young & Duncan, 2014; Youngblood, Trede, & DeCorpo, 2001).

What has been even more perplexing was that there were researchers, such as Moskal, Dziuban, and Hartman (2010), who argued more attention should have been given to the adult online learner, but they still did not utilize or advocate of the usage of the Adult Classroom Environment Scale in research. In their study, Moskal et al. examined university collected research on adult learners engaging in a distributed learning program at the University of Central Florida over the course of several years. In examining the archival research data, Moskal et al. concluded most online instructors were focused on the learning styles, preferences, and technologies beneficial to the millennial generation as opposed to adult learners who were also present in their courses. Moskal et al. noted that adult online learners persisted in taking online courses at the

University of Central Florida because the learning environments were seen as active, empowering, and fit their lifestyle needs. Additionally, Moskal et al. noted the data on adult learners' satisfaction was collected by a using simple five-point Likert scale survey and criticized it as lacking in the complexity needed to capture the respondents true opinion of the course as well as that it lacked the ability to record more useful demographic data. While Moskal et al. did not recommend another type of measure, it is possible that the Adult Classroom Environment Scale, along with better demographic questions, would have been appropriate.

The Four Dimensions of Design

Although Darkenwald and Valentine (1986) demonstrated that the Adult Classroom Environment Scale is a good measure of adult learners' perceptions, the scale itself actually measures multiple dimensions of these perceptions. Based on the descriptions of these dimensions provided by Darkenwald and Valentine, the dimensions seem to fall into either the category of course design or that of instructor facilitation. The dimensions related to course design were used in this study, which included affiliation, involvement, personal goal attainment, and organization and clarity. Each of these dimensions was found to be related to some aspect of online course design and were each important in their own way (Jain & Jain, 2015; Ralston-Berg, 2014; Rao & Tanners, 2011; Singh, 2013; Tayebinik & Puteh, 2013; Wanner & Palmer, 2015).

Affiliation

Affiliation was defined in terms of collaborations and interaction from a student to student perspective (Darkenwald & Valentine, 1986). Studies on affiliation in the context of online course design, such as Singh's (2013) work with knowledge sharing in

virtual environments, focused on the various interactions present in online courses. Singh surveyed 169 adult learners enrolled in a graduate level Library and Information Science degree program about their level of interactions and collaborative activities that they engaged in during their online group projects by using a simple 5-point Likert scale survey. From these data, Singh divided the online groups by the level of knowledge creation and determined that three types of groups existed; enhanced knowledge creation which comprised the upper 25% of the participants, moderate knowledge creation which comprised the middle 50% of participants, and baseline knowledge creation which comprised the lower 25% of participants. Singh stated that participants who comprised the baseline group ($M = 2.17$) reported difficulty engaging in discussions and were less willing to engage in collaborative activities than the moderate ($M = 2.75$) or enhanced groups ($M = 2.89$). By contrast, Singh reported participants in the enhanced knowledge sharing group reported the highest level of advanced online collaborative tools usage and tended to use tools, such as Wiki and Adobe Connect, that the baseline group rarely reported using. While this alone seemed to indicate the importance of interaction and collaboration in online groups, Singh also surveyed students regarding their overall course satisfaction and recorded that participants in the enhanced knowledge creation groups ($M = 2.87$) reported the highest levels of satisfaction whereas those in the baseline groups ($M = 1.88$) were the most dissatisfied and reported issues with communication, scheduling, and a strong dislike for collaborative projects. From this, Singh concluded interaction and collaboration in online courses were critical to student success and satisfaction.

Although Singh's (2013) study highlighted how important interaction and collaboration can be in ensuring student knowledge creation and course satisfaction, the study by Jain and Jain (2015) helped showcase how important it was to facilitate these interactions with quality online course design. In their study, Jain and Jain examined the student postings to discussion boards in 16 online graduate nursing courses. From their study, it was determined that the design of the discussion board activities, with regards to group size, introductions, and facilitation of student social interactions, seemed to have a positive relationship to the overall quality and meaningfulness of the student posts (Jain & Jain, 2015). In addition, Jain and Jain noted that the act of assigning a grade to the discussion activity and the presence of synchronous communication tools did not enhance the meaningfulness of discussion posts. Jain and Jain's study helped demonstrate that affiliation in a course, with respect to student-to-student interactions and collaboration, needs to be specifically designed in order to increase the quality of the overall student experience.

Involvement

The definition of involvement focused on the student's participation, satisfaction, and attentiveness during class activities (Darkenwald & Valentine, 1986). Tayebinik and Puteh (2013) demonstrated the importance of involvement with their study on student participation and passing grades in online courses. Tayebinik and Puteh examined 112 undergraduate students enrolled in online courses for English as a Foreign Language by periodically reviewing their participation in online class activities as the students progressed through the courses and comparing that data to the student's final grade for the course. They observed that having a passing grade was significantly related to class

activities with student to teacher interactions ($r = .884$, $p < .01$), activities that involved student-to-student interactions ($r = .879$, $p < .01$), as well as group discussion activities ($r = .904$, $p < .01$). In addition, they indicated that not only were passing grades related to participation in online course activities, but students who were participating more in those activities more frequently had a greater chance of passing the class. Tayebinik and Puteh stated this finding was consistent with many previous studies concerning involvement in online courses and that the degree of student involvement seemed to be a key predictor of student success in an online course.

Personal Goal Attainment

Darkenwald and Valentine (1986) defined personal goal attainment in relation to flexibility and the ability to provide individualized opportunities for students to incorporate their own personal interests. Providing individualized learning opportunities for students was seen as a very important and revitalized trend for higher education according to Wanner and Palmer (2015) who studied instructor and student reactions to a personalized learning course. Wanner and Palmer surveyed 109 undergraduate students completing a Governance course that utilized a flipped-classroom approach where students would complete most work and activities online and attend two full lectures and multiple short face-to-face mini-lectures throughout the term. In the class Wanner and Palmer studied, students were able to negotiate their own assessment plan which included decisions on what kind of assessment they would complete for the course, the nature of the feedback they would receive from the instructor, and indicators of any personal learning difficulties or concerns that they wanted the instructor to know. Wanner and Palmer ascertained that students in the course seemed to prefer the personalized learning

assessment with 67% agreeing the personalized assessment was a good idea versus the 10% who thought it was not a good idea and 71% confirming that they liked the flexible learning in the course versus the 8% who did not like being in a class with flexible learning. The only area where the majority of students disagreed was with the notion that the flexible learning style of the course involved less work and less time than a regular course with only 24% agreeing with the statement and 62% saying they did not think it was less work or time (Wanner & Palmer, 2015). From these data, along with responses from open-ended questions, Wanner and Palmer concluded that the flexibility in learning and the personalized assessments were important factors to student satisfaction in the flipped-classroom Governance course they studied. Additionally, they extrapolated their findings and argued that their study demonstrated how personalization of assessment and learning were key components to increasing overall student satisfaction and increasing student success in higher education courses in general (Wanner & Palmer, 2015).

Organization and Clarity

Darkenwald and Valentine (1986) simply defined organization and clarity from the student perspective of how well class activities and instructions were organized. Not surprisingly, this dimension is the focus of researchers looking to improve their course offerings such as Rao and Tanners (2011) who examined methods for ensuring organization and clarity in an online course. In their research, Rao and Tanners conducted an in-depth analysis of an online course that utilized principles of Universal Design as its method to ensure the course was well organized, accessible, and clear to students of varying backgrounds and learning styles. In the class that Rao and Tanners studied, 25 students were surveyed and interviewed to determine their perceptions of the

course and how satisfied they were with the Universal Design principles. Between the survey data and the interviews, Rao and Tanners reported that all students were in agreement that the course material was well organized and clear.

Rao and Tanners (2011) were not alone in their pursuit of finding the best model to ensure organization and clarity in their courses. Other researchers, such as Carter, Leslie, and Kwan (2012) utilized Universal Design techniques in an attempt to ensure course organization and clarity for students. Carter et al. surveyed 350 undergraduate students from eight online courses on their perceptions and preferences concerning universal design practices in their online course. Carter et al. determined that the majority of students rated the universal design aspects of their online classes highly, gave high ratings to areas of organization or course content, and, in the majority of classes, rated their overall course satisfaction high as well. Carter et al. concluded this demonstrated that students, in general, liked Universal Design techniques. However, Carter et al. indicated a possible limitation in that their ratings were influenced by sensitivity to the disability needs of other students. Despite the potential influence of student concern for students with disabilities, the research presented by Rao and Tanners (2011), as well as that by Wanner and Palmer (2015), made an argument for using Universal Design elements to ensure the organization and clarity of online courses and help demonstrate the overall importance of organization and clarity in online course design.

An alternative, but highly successful, approach to ensuring organization and clarity in an online course has been to utilize a validated rubric to score the course design such as the Quality Matters Rubric (Ralston-Berg, 2014). Since its creation, researchers

like Ralston-Berg (2014) have examined the impact that designing classes with Quality Maters has on students. Ralston-Berg used a simple question with a 4-point Likert scale and surveyed 3,160 students taking online classes from 31 different institutions on their perception of the 25 elements of the Quality Matters and how valuable they considered each element to ensuring student success in an online course. Ralston-Berg observed that students ranked all Quality Matters items as important which demonstrated that the rubric items were all important to students. Specifically, the rubric item contained several items pertaining to course organization and clarity which the students all rated highly such as having clear getting started instructions ($M = 2.66$, $SD = 0.6$), having clear instructions on how to meet objectives ($M = 2.30$, $SD = 0.77$), clarity in grading policy ($M = 2.49$, $SD = 0.65$), and course navigation is logical, consistent, and efficient ($M = 2.51$, $SD = 0.67$). Though Ralston-Berg pointed out that some items were asked a little differently than in previous years, overall the study demonstrated that students considered the elements of the Quality Matters rubric to have been valuable towards student success in online courses. Whether utilizing Universal design or a rubric like Quality Matters, it was clear that researchers and students alike considered organization in clarify to be important aspects of an online course (Ralston-Berg, 2014; Rao & Tanners, 2011; Wanner & Palmer, 2015).

Importance of Demographics on Course Design

When considering the different elements that make up a course's design, researchers have argued that online course designers also needed to take into account possible differences in students' preferences that could have been present due to various demographic factors (Ashong & Commander, 2012). Often research on the

demographical influences tends to focus on the three most common demographic differences; age, gender, and race (Ashong & Commander, 2012; Ausburn, 2004; Garland & Martin, 2005). While there are other possible learner characteristics that could be connected to a difference in learners' preferences, age, gender, and race seem to be particularly prevalent in research involving online learning (Ashong & Commander, 2012; Ausburn, 2004; Garland & Martin, 2005).

Age

Similar to the initial research conducted by Darkenwald and Valentine (1986) with adult learners, Ausburn (2004) was concerned with how the difference in age of adult learners might impact their online course design preferences. In her study, Ausburn conducted a survey of students in a learning environment that was a mix of physical and online course elements by providing them with a 15-item list of course elements and an eight-item list of course features and then asking them to rank them in importance to the learning environment. Ausburn stated the adult learners in her study did have specific preferences with regard to course design elements and that they put a high value on the course design elements related to personalization, communication, options, learning community, and self-direction. These findings were similar to other research conducted on the differences between adult learners and traditional student such as DiBiase and Kidwai (2010) who reported that adult learners communicated more often and spent more time logged into online courses than traditional students or Chyung (2007) who ascertained adult learners posted more often on discussion boards than traditional students did. Together these findings indicate that age is a factor that influences a student's preferences and actions in the online classroom environment.

Gender

In addition to age, Ausburn (2004) also looked for differences in gender and noted the biggest differences in ranking were in regards to the expansion of technology skills which were ranked in the top five for men (rank = 4) but ranked very low for women (rank = 13.5). While this was not the main purpose of the study, Ausburn's finding suggested that gender differences could also have resulted in different preferences in online environment elements.

The idea of gender based preferences for online courses was also supported by Garland and Martin (2005) whose research focused on learning style preferences in online courses. Garland and Martin examined 168 students by surveying them with a learning style preference inventory and by measuring their engagement through student usage and activity in the online course itself. Among their findings, Garland and Martin discovered that although there were not any significant correlations for women with regards to learning style preferences and online course engagement, there was a significant relationship between men who preferred the Abstract Conceptualization style of learning ($r = .390$, $p = .049$) and their usage of the communication tools in the online course. While not significant, Garland and Martin did find difference in gender in that women tended to have strong positive correlations with the Reflective Observation style of learning and various course elements while having a strong negative correlation with Abstract Conceptualization and those same elements of the course design while men not only had a significant correlation between course design elements and Abstract Conceptualization, but also tended to have a strong negative correlation between those elements and Reflective Observation.

Ashong and Commander (2012) came to similar conclusions that gender differences resulted in different online element preferences with their study on race and gender in online classrooms. In their study, Ashong and Commander found even more differences between the genders with women tending to have a more positive perception than men on online classroom elements related to instructor support, student collaboration, autonomy, authentic learning, and personal relevance. These types of findings underscore the influence gender has on a student's preferences for an online course and demonstrated that gender differences should be accounted for when designing an online course.

Race

While Ashong and Commander's (2012) found several differences between gender and perceptions of online course elements, their study also examined the role of race in those perceptions. In their study, Ashong and Commander surveyed 120 graduate and undergraduate students of various races who were engaged in online courses at a southeastern university in the United States of America and asked them various demographic questions as well as questions regarding their perceptions and preferences of their online learning environment. Although Ashong and Commander found differences in regard to gender and students' perceptions of their online learning environment, they also found separate differences in regard to race. According to the results, there was a significant different between White students' and Black students' perceptions of Asynchronicity ($p = .053$) with White students showing a higher perception ($M = 4.52$) than Black students ($M = 4.20$) (Ashong & Commander, 2012). Ashong and Commander noted the importance of this finding as Asynchronicity was not

a factor found to be different between genders and implied that race may have been a singular factor in the different perceptions. Although this was the only significant finding related to race, Ashong and Commander reported additional non-significant differences between race and perceptions of online course elements and suggested that the limitations in the study's sample size contributed to the lack of additional significant findings. While the significant findings were limited, these researchers still showed the possibility for various race demographics to influence the preferences and perceptions of online course elements in addition to those differences found to be related to gender.

Summary

Moskal, Dziuban, and Hartman (2010) advocated for more research to be conducted specifically on adult online learners, but as this literature review has demonstrated, the majority of research seems to still be centered around either adult learners in general or online students in general with little research being conducted targeting the combination of the two; aside from the occasional inclusion of a demographic significance in a larger study. The lack of research targeting adult online learners has a strong parallel to the research rationale of Darkenwald and Valentine (1986) who, after finding a lack of attention to adult learners in educational research of the social environment of the classroom, went on to conduct their own research to address this perceived research deficit. This strong parallel, along with the divided nature of online research being categorized into either that of the online environment or the facilitation of an online course, has led to the goal of this research, which is to utilize the established Adult Class Environment Scale to specifically study adult learners' rated perceptions of their ideal online classroom environment as compared to their rated

perceptions of their ideal physical classroom environment in order to provide a better and more targeted training solution to instructors at Valdosta State University.

Specifically, in this study I attempted to address the following research questions:

1. Is there a significant difference between adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity?
2. To what extent is there a significant relationship between adult learners' age (young adults ages 18-24, working-age adults ages 25-64, and older adults ages 65 and older), gender, race, and adult learners' perceptions of an ideal online classroom environment as measured on the Adult Classroom Environment Scale?

Chapter III

METHODOLOGY

The motive to conduct this study originated from a need to assist instructors transitioning from designing classroom instruction in the physical classroom environment to the online classroom environment by providing them with a clear understanding of what elements they should focus on most during the process of transition. To serve this, the main purpose of this study was to determine what, if any, differences existed between adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment with consideration to the elements most closely related to the actual design of the environment. It was possible that any differences discovered could have been specific to certain demographic variables. In order to best inform transitioning faculty of the areas that need the most attention, a secondary goal for this study was to determine if any relationships existed between adult learner demographics (age, gender, and race) and their perceptions of an ideal online class.

Research Questions

The focus of this study was to aid those instructors moving from creating classes in a physical classroom environment to creating classes in an online environment. To this end, through this study I sought to answer the following research questions:

1. Is there a significant difference between adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity?
2. To what extent is there a significant difference between adult learners' age (young adults ages 18-24, working-age adults ages 25-64, and older adults ages 65 and older), gender, race, and adult learners' perceptions of an ideal online classroom environment as measured on the Adult Classroom Environment Scale?

Though previous research supported the idea of differences between adult learner's perceptions of physical and online classroom environments, as well as differences among student's perceptions of their online classroom environment based on various demographics, the previous research was not conclusive enough to make a prediction to the specific associations that could have occurred with Adult Classroom Environment subscale dimensions (Ashong & Commander, 2012; Ausburn, 2004; Garland & Martin, 2005; Horspool & Lange, 2012; Swan, 2001; Young & Duncan, 2014; Youngblood, Trede, & DeCorpo, 2001). As a result, research questions were used in this study instead of specific directional research hypothesizes.

Population and Sample

The population of interest consisted of adult learners of various ages, genders, and races, who were currently or recently enrolled in a physical and/or online course at Valdosta State University, a regional university located in southern Georgia. The incentive to utilize

this population was based upon the overall goal of improving the transitional process of moving from the physical to the online classroom for instructors at Valdosta State University; by utilizing the exact population those instructors would be teaching, this increased the overall usefulness of the results of this study. The target population included adult learners who had only taken online classes at the time of the study, adult learners who had only taken physical classes at the time of the study, and those who had taken both. This inclusive sampling procedure was carried out to increase the overall size of the sampled population. As the instrument used asked adult learners to rate items based on their ideal classroom environment rather than ones they had actually experienced, there was not a need for participants to have actually been exposed to a particular classroom environment to participate in the study.

The study initially received 321 responses; however, of those responses 151 were removed from the sample for not completing both of the Adult Classroom Environment Scale versions presented during the survey. The remaining responses comprised a sample size of n = 170. The age of the sampled students ranged from 18 minimum to 69 maximum, with a mean age of 26.68 years. Of these students the n = 90 fell into the age group of young adults ages 18-24 which represented the majority of responses at 53% of the total sample, n = 55 were in the age group of working-age adults ages 25-64 which represented 32% of the total sample, and n = 1 were classified as older adults ages 65 and older which represented around 1% of the total sample. An additional n = 24 respondents declined to provide their age which represented the remaining 14% of the total sample.

Similar to age, the gender of the sample had a clear majority with n = 134 students reporting to be female representing 79% of the total sample, while only n = 34

reported to be male representing 20% of the total sample. The remaining n = 2 students reported themselves as gender neutral representing the remaining 1% of the total sample. The races of the sample also had a definitive majority with n = 102 students self-identifying as White representing 60% of the total sample, while n = 53 students self-identified as Black or African-American representing 31% of the total sample. An additional 8% of students self-identified as either; n = 1 American Indian or Alaska Native, n = 3 Asian/Pacific Islander, n = 4 Hispanic or Latino, or n = 5 other and the final 1% declined to provide a response n = 2. The sample represented the targeted population with respect to age, gender, and race.

Table 1

Descriptive Statistics of Sample Population

Demographic Characteristic	Participants (n = 170)	Rounded Percentage of Population
Age		
Young Adults 18-24	90	53%
Working-age Adults 25-64	55	32%
Older Adults 65 or older	1	1%
Gender		
Male	34	20%
Female	134	79%
Gender Neutral/No Gender	2	1%
Race		
White	102	60%
Black or African American	53	31%
American Indian or Alaska Native	1	1%
Asian/Pacific Islander	3	2%
Hispanic or Latino	4	2%
Other*	5	3%
Other**	13	8%

Note. The first instance of Other* in the above table represents the option on the survey labeled as "Other" and listed data is directly from what participants selected during the survey. The second instance of Other** represents the combined grouping of all participants that selected a race other than White or Black. This was done in order to perform statistical analysis due to the low number of respondents from those races.

Selection of Participants

For this study I utilized an online web survey; however a major concern with utilizing an online survey was a low rate of return (Callegaro, Manfreda, & Vehovar, 2015). To help protect against a low rate of return and aid in obtaining a large sample size participants were recruited using multiple procedures which included email and utilizing known social media outlets. Solicitation of participation went out to those adult learners who were attending or had recently attended classes at Valdosta State University at the time of the study. However, only those who voluntarily completed the surveys were included in the study. In all participant solicitation communications information was provided that; identified the researchers, explained the purpose of the study, guaranteed confidentially, assured the rights of the participant, and offered a way in which participants could obtain the results of the study when completed (see Appendix A).

Communications also included information about a raffle that was offered alongside the survey (see Appendix A). Four $25 Amazon gift cards were given away to draw more attention to the survey and help secure additional participation. Any and all statements that contained information about the raffle also included a statement that survey participants were given a chance to enter the raffle even if they did not complete every question on the survey, dropped out of the study, or chose not to participant in the study but wrote the researcher for inclusion in the raffle. Participants who engaged in the survey confirmed they were Valdosta State University students, 18 or older, and acknowledged that they had read a provided statement pertaining to informed consent before they began the survey. After the submission of the online survey, whether it was

fully completed or not, respondents were provided a link to a separate survey where they were given the opportunity to enter into the raffle for one of four Amazon gift cards.

Instrumentation

Originally developed through the work of Darkenwald and Valentine (1986) as a way to measure the classroom environment of adults, the Adult Classroom Environment Scale was used for this study. The version of the instrument created by Darkenwald and Valentine (1986) consisted of 49 items, seven items each for seven subscale dimensions; teacher support, task orientation, student influence, involvement, affiliation, personal goal attainment, and organization and clarity. Survey items were provided to participants with a 4-point response scale which ranged from strongly disagree to strongly agree (see Appendix B). Three questions were added at the end to collect the demographic data pertaining to age, gender, and race (see Appendix B). Similar to alterations done by other researchers using the Adult Classroom Environment Scale, like Freddolino and Sutherland (2000) or Kelly and Bronstein (2003), in this study I utilized two versions of the survey; one asked adult learners to rate their ideal version of a physical classroom and the other version asked adult learners to rate their ideal version of an online classroom (see Appendix B). No other items were added or altered to this instrument in order to preserve its validity and reliability.

Reliability

To help establish reliability for their instrument, Darkenwald and Valentine (1986) provided the Adult Classroom Environment Scale to 308 students and 16 instructors from a credit-bearing program for adults, 156 students and 5 instructors from an evening M.B.A. program at a large state university, and 266 students and 25

instructors enrolled in personal enrichment or vocational classes from a community adult school. From the responses, Darkenwald and Valentine provided evidence of subscale reliability through the computation of Cronbach's alpha for each subscale, which ranged from acceptable (.58) to high (.89), and evidence of discriminate validity, meaning the subscales were not measuring the same things, by examining the intercorrelations among the seven subscales, which ranged from low (.20) to moderate (.55) and had a mean of .37.

Validity

Content validity was established through the systematic selection and refinement process. This process involved shortening the original list of 159 items, to a smaller list of 89 items that was then given to 220 adult learners from a variety of environments whose feedback, and a standard item-analysis, produced the final 49-item version of the survey (Darkenwald & Valentine, 1986).

In order to establish additional validity, Darkenwald and Valentine (1986) included two items on the forms to serve as a check for concurrent validity. The first item asked if the respondent was satisfied with the class and the second asked if they felt the class had successfully taught them. Darkenwald and Valentine reported that the subscale items; teacher support (.70), task orientation (.51), student influence (.74), involvement (.71), affiliation (.49), personal goal attainment (.60), and organization and clarity (.68), had a significant correlation at or beyond the .001 level with both the satisfaction and success the classroom environment items and thus showed evidence to validate the Adult Classroom Environment Scale as a measure of adult learners' classroom environment. Further, evidence for construct validity was determined in

Darkenwald and Valentine's study by the appearance of only low to moderate intercorrelations between the seven subscale dimensions which demonstrated the dimensions were not measuring the same things.

Online Version of the Instrument

The items used to create the Adult Classroom Environment Scale were restructured into an online version of the instrument that was used due to various factors which made it more beneficial than the traditional paper-and-pencil survey method utilized by Darkenwald and Valentine (1986). Whereas the delivery method itself was altered, none of the items, scales, or structure of the instrument was changed. The benefits to utilizing an online version of a survey was the low cost of reaching a large population, the increased speed at which data was collected, the ease of respondent participation, and an increased reach of potential participants through many modern electronic means including; email, online communities, and social media outlets (Callegaro, Manfreda, & Vehovar, 2015). Permission to utilize his instrument in this manner for this study was provided by Darkenwald via email and details confirmed via a phone conversation (see Appendix C).

Research Design

Through this study I sought to examine what, if any, significant differences existed between adult learners' ideal physical classroom environment and their ideal online classroom environment as measured by the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity. To this end, a simple inferential study was used to determine what differences

existed between adult learners' perceptions of an ideal physical classroom environment and adult learners' perceptions of an ideal online classroom environment.

Further, through this study I sought to understand whether or not there existed any differences between selected demographical characteristics (age, gender, and race) of adult learners and their ideal online classroom environment as measured by the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity. For this question, a more complex inferential design was used to examine if differences existed between the non-manipulated demographic variables of age, gender, race, and participant perceptions of an ideal online classroom environment as measured on the various factors of the Adult Classroom Environment Scale.

Variables

The independent variables for the study were:

1. Age of the adult learner - young adults between the ages of 18-24, working-age adults between the ages of 25-64, or older adults aged 65 or older.
2. Adult learner gender.
3. Adult learner race.
4. Adult learner perceptions of an ideal physical classroom environment as measured by the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity.

In accordance with, Darkenwald and Valentine (1986) involvement was defined as being concerned with class activities and focused on the student's participation,

satisfaction, and attentiveness during activities. Likewise, the definition of affiliation was defined in terms of collaborations and interaction from a student to student perspective. Personal goal attainment was defined in relation to flexibility and the ability to provide individualized opportunities for students to incorporate their own personal interests. Finally, organization and clarity was defined from the student perspective of how well class activities and instructions were organized.

The dependent variables were adult learners' perceptions of an ideal online classroom environment as measured by the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity and used the same definitions provided above.

Data Collection Procedures

Following approval by the Valdosta State University Institutional Review Board (see Appendix D), study participation solicitations were sent out through multiple means including email and posts to social media (see Appendix A). These solicitation communications contained a link to the online version of the Adult Classroom Environment Scale hosted in Qualtrics. Qualtrics was an online survey tool that was used in this study because Valdosta State University had a paid license to utilize the tool and it met all the security, distribution, and ease of use needs of the researcher at the time of the study. The survey was open to any individuals who had access to the link, but requested participants to verify they were current or recent students of Valdosta State University and at least 18 years of age before they accessed the actual survey.

There were two versions of this online survey given to participants at random. In one version, participants were asked to picture their ideal physical classroom environment and then instructed to complete the survey questions based on this ideal environment that they imagined. Once they completed that section, they then were asked to picture their ideal online classroom environment and instructed to complete the remaining survey items for their ideal online classroom environment. In the other version, the order was reversed and participants were first asked to picture their ideal online classroom environment and then instructed to complete the survey questions based on the ideal environment that they had imagined. Once they had completed that section, they were then asked to picture their ideal physical classroom environment and further instructed to complete the survey items based on their ideal physical classroom environment. This was done in order to help control for any possible extraneous variables such as a priming effect or participant fatigue.

The Qualtrics system itself was programed to create the two possible versions of the survey by randomly providing participants with either the physical classroom environment or the online classroom environment instructions first and then providing them the other section afterwards. After completing the 98 initial items of the survey, participants were then asked three additional demographic questions that addressed their age, gender, and race. After completion, their data were collected and saved directly to the Qualtrics servers.

Approvals and Protection of Human Subjects.

Prior to sending out any solicitation communications to the selected population, I filed the necessary forms with the Institutional Review Board and obtained permission to

complete the study (see Appendix D). Informed consent was provided through a statement listed on the survey link as part of the directions that participants read and acknowledged prior to accessing the actual survey (see Appendix B). This was used to provide the context and purpose for the study. This page included participant's rights compliance information and guaranteed confidentiality. Information on how to obtain results of the study was provided in all solicitations for participation so that anyone, even those who did not participate in the study, were able to obtain information about its results.

It was important for researchers to maintain the privacy rights of all participants in the study. This researcher utilized Qualtrics as a means to collect and secure data. A full privacy statement about Qualtrics was available at http://www.qualtrics.com/privacy-statement/. Qualtrics was committed to protecting data collection and storage on their servers located in the United States. Settings were adjusted in Qualtrics to prevent the recording of any identifiable information from participants other than the general demographic information that was asked during the survey itself. All efforts were made to ensure that participant's confidentiality was maintained. When the study was completed, survey data was stored on Qualtrics servers and protection of data maintained by Qualtrics.

Data Analysis

Data were analyzed once the survey had closed and all data collected. Responses were downloaded from Qualtrics and uploaded into the data analysis program Statistical Package for the Social Sciences (SPSS) where they were analyzed. First, the Adult Classroom Environment Scale used for the ratings of ideal physical classroom

environment and the Adult Classroom Environment Scale used for the ratings of the ideal online classroom environment were scored by taking the average rating across the seven questions used for each of the four subscales relevant to this study (see Appendix E). In order to compare the ratings of adult learners' ideal physical classroom environment and their ideal online classroom environment, a paired samples *t* test was used to compare these two ratings on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity. The significance threshold was set at .05 for this analysis. This method followed the analytical methods of a similar study by Young and Duncan (2014) who also compared Adult Classroom Environment Scale ratings of physical and online classrooms much in the way I did during this study.

To determine the relationship between the demographics of age, gender, or race, and adult learners' perceptions of an ideal online classroom environment, a univariate analyses of variance (ANOVA) was conducted with each of the four dimensions of interest from the Adult Classroom Environment Scale serving as dependent variables and each of the demographics serving as an independent variable. Three ANOVAs were run in total, one for adult learner age, one for adult learner gender, and one for adult learner race. The significance threshold was set at .05 for these analyses. This method of analysis was recommended by Ashong and Commander (2012) who conducted a similar study in which the multiple demographics of participants were compared to their ratings on a multi-dimensional scale similar to the Adult Classroom Environment Scale.

Chapter IV

RESULTS

The central focus of this study was to find a way to assist instructors who were converting from designing courses for the physical classroom environment to designing courses for the online classroom environment. To this end, I focused on answering two research questions that could provide faculty with a better understanding of what elements they should focus on when designing for the online classroom environment that they perhaps did not need to focus on when they had designed course for the physical classroom Environment. Those research questions were:

1. Is there a significant difference between adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity?
2. To what extent is there a significant difference between adult learners' age (young adults ages 18-24, working-age adults ages 25-64, and older adults ages 65 and older), gender, race, and adult learners' perceptions of an ideal online classroom environment as measured on the Adult Classroom Environment Scale?

Research Question 1

In order to address the first research question and compare adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity, a paired samples *t* test was used to compare students' average ratings of each dimension on both the ideal physical classroom environment and the ideal online classroom environment. As shown in Table 2 there is a significant difference ($t(169) = -9.04$, $p < 0.001$) in ratings of personal goal attainment with students' rating personal goal attainment in their ideal physical classroom environment ($M = 2.70$, $SD = 0.44$) significantly lower than in their ideal online classroom environment ($M = 3.01$, $SD = 0.53$). As further seen in Table 2, the effect size for this analysis ($d' = 0.64$) was found to exceed Cohen's (1988) convention for a medium effect ($d' = 0.50$), but not that of a large effect ($d' = 0.80$). In a similar study by Young and Duncan (2014), the significant differences found only had a small effect size and were considered too small to be relevant; so while this effect size is not large, the medium effect size could be considered relevant.

Additionally shown in Table 2, there were not any significant differences ($t(169) = 0.10$, $p = 0.923$) in the physical classroom environment ratings of involvement ($M = 3.16$, $SD = 0.56$) and the corresponding online classroom environment ratings of involvement ($M = 3.15$, $SD = 0.54$). While also not significantly different, Table 2 does show that both affiliation ($t(169) = -1.82$, $p = 0.070$) and organization and clarity ($t(169) = 1.86$, $p = 0.065$) were close to significant in their rating differences. Ratings of affiliation in an ideal physical classroom environment ($M = 2.98$, $SD = 0.38$) were

slightly lower than in an ideal online Classroom environment ($M = 3.04$, $SD = 0.54$) and ratings of organization and clarity in an ideal physical classroom environment ($M = 3.53$, $SD = 0.46$) were slightly higher than in an ideal online Classroom environment ($M = 3.48$, $SD = 0.51$).

Table 2

Paired Samples T Test of Ideal Classroom Environments

Adult Classroom Environment Scale Dimension	Ideal Physical Classroom Environment		Ideal Online Classroom Environment					
	Mean	*SD*	Mean	*SD*	t	df	*p*	Cohen's *d'*
Involvement	3.16	0.56	3.15	0.54	0.10	169	0.923	0.02
Affiliation	2.98	0.38	3.04	0.54	-1.82	169	0.070	0.13
Personal Goal Attainment	2.70	0.44	3.01	0.53	-9.04	169	0.000*	0.64
Organization and Clarity	3.53	3.48	0.46	0.51	1.86	169	0.065	0.10

*$p \leq 0.05$

When looking at the mean ratings of both the ideal physical classroom environment and ideal online classroom environment across the four Adult Classroom Environment Scale dimensions there does not seem to be a single dominant environment type. As shown in Figure 1, the means for both involvement and organization and clarity are higher for the ideal physical classroom environment than the ideal online classroom environment, while for affiliation and personal goal attainment, the ideal online classroom environment has the higher ratings on average. Also demonstrated in Figure 1, while there are differences, all of the means seem to be relatively high on the overall scale.

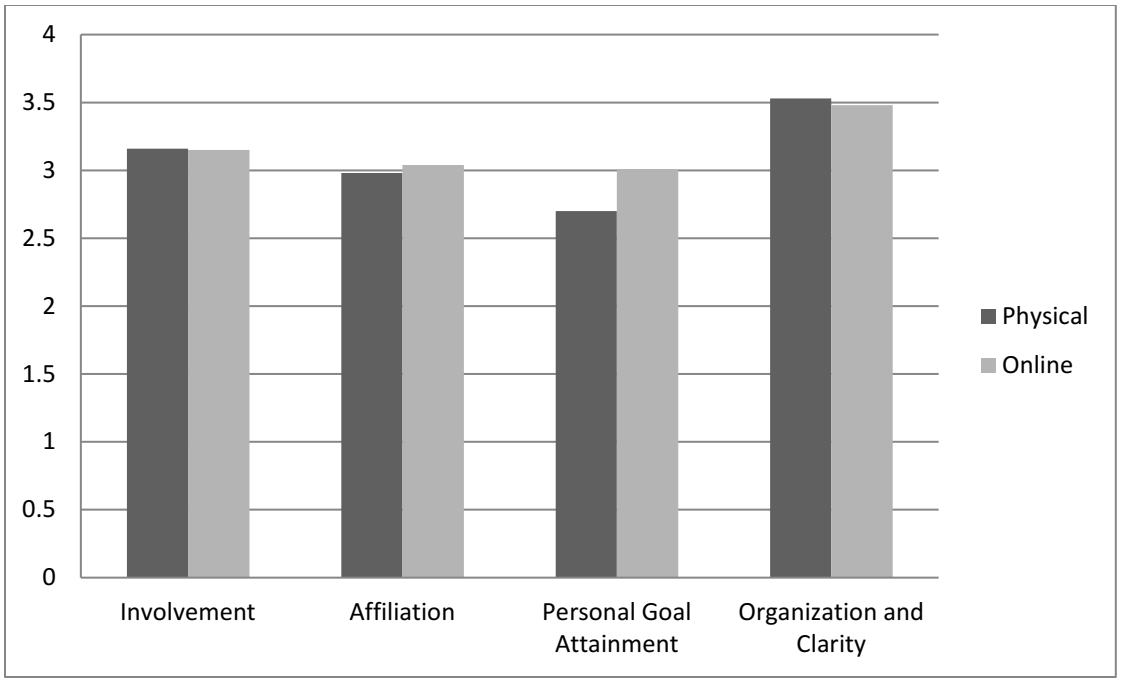

Figure 1. Comparison of physical and online classroom environment ratings across the four Adult Classroom Environment Scale dimensions.

Research Question 2

In order to address the second research question and to determine the relationship, if any, between the demographics of age, gender, or race, and adult learners' perceptions of an ideal online classroom environment, an ANOVA was conducted with each of the four dimensions of interest from the Adult Classroom Environment Scale serving as dependent variables and each of the demographics serving as an independent variable. Three ANOVAs were run in total, one for adult learner age (see Table 3), one for adult learner gender (see Table 4), and one for adult learner race (see Table 5). As seen in Table 3, age did not have a significant effect on any of the four analyzed dimensions of the Adult Classroom Environment Scale for ratings of ideal online classroom environment.

Table 3

ANOVA for Effect of Age on Online Classroom Environment Ratings

Adult Classroom Environment Scale Dimension	Young Adults 18-24		Working-age Adults 25-64		Older Adults 65 or Older				
	Mean	*SD*	Mean	*SD*	Mean	*SD*	*df*	*F*	*p*
Involvement	3.18	0.51	3.07	0.61	3.14	NA	169	0.67	0.571
Affiliation	3.05	0.45	3.02	0.66	2.86	NA	169	0.08	0.972
Personal Goal Attainment	2.99	0.52	3.04	0.58	3.14	NA	169	0.13	0.944
Organization and Clarity	3.52	0.48	3.41	0.60	3.43	NA	169	0.50	0.684

*$p \leq 0.05$

As further demonstrated in Figure 2, the mean rating given by the various age groups were similar across all four dimensions of the Adult Classroom Environment Scale. In addition, there does not appear to be any age groups that consistently rated all of the dimensions higher than either of the other age groups. The closest is the young adult group who provides the highest rating on the dimensions of involvement, affiliation, and organization and clarity, but then provided the lowest rating on the dimension of personal goal attainment. Furthermore, all of the ratings were very high with none of the mean ratings falling below a rating of 2.5.

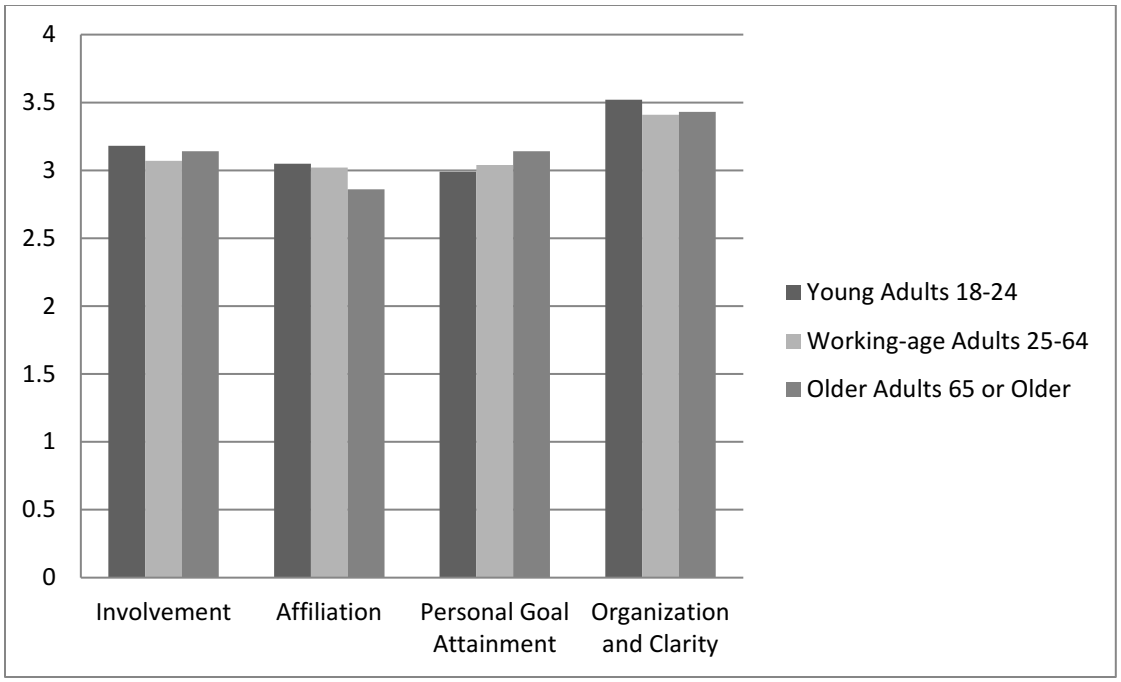

Figure 2. Comparison of online classroom environment ratings for the Adult Classroom Environment Scale dimensions by age.

As shown in Table 4, gender did have a statistically significant effect [$F(2,167) = 3.81$, $p = 0.024$] on ratings of the ideal online classroom environment on the Adult Classroom Environment Scale dimension of organization and clarity with gender neutral students ($M = 3.86$, $SD = 0.20$) providing the highest rating, female students ($M = 3.53$, $SD = 0.46$) providing the second highest rating, and male students ($M = 3.28$, $SD = 0.67$) providing the lowest rating. Post hoc comparisons using the Tukey HSD test indicated that the mean ratings from female students ($M = 3.53$, $SD = 0.46$) were significantly different than the mean ratings from male students ($M = 3.28$, $SD = 0.67$). However, the mean ratings from gender neutral students ($M = 3.86$, $SD = 0.20$) did not significantly differ from either female or male student ratings. Further, while not statistically significant, Table 4 does show that gender had a near significant effect on the dimension of involvement [$F(2,167) = 2.84$, $p = 0.061$] with gender neutral students ($M = 3.50$, $SD =$

0.71) providing the highest ratings, female students ($M = 3.20$, $SD = 0.49$) providing the second highest ratings, and males students ($M = 2.97$, $SD = 0.67$) providing the lowest ratings.

Table 4

ANOVA for Effect of Gender on Online Classroom Environment Ratings

Adult Classroom Environment Scale Dimension	Male		Female		Gender Neutral/ No Gender				
	Mean	*SD*	Mean	*SD*	Mean	*SD*	*df*	*F*	*p*
Involvement	2.97	0.67	3.20	0.49	3.50	0.71	169	2.84	0.061
Affiliation	2.89	0.70	3.07	0.48	3.43	0.81	169	2.09	0.127
Personal Goal Attainment	2.90	0.64	3.03	0.49	3.71	0.40	169	2.57	0.079
Organization and Clarity	3.28	0.67	3.53	0.46	3.86	0.20	169	3.81	0.024*

*$p \leq 0.05$

As seen in Figure 3, while only the ratings of organization and clarity were significantly different, the means ratings of the four Adult Classroom Environment Scale dimensions by students of various genders seem to follow a pattern with gender neutral students providing the highest ratings across all four dimensions. This was followed by female students who provided the second highest rating across all four dimensions and then male students who consistently provided the lowest ratings relative to the other two gender types. However, it is also seen in Figure 3 that all of the ratings were generally very high with no single rating by any gender falling below an average rating of 2.5.

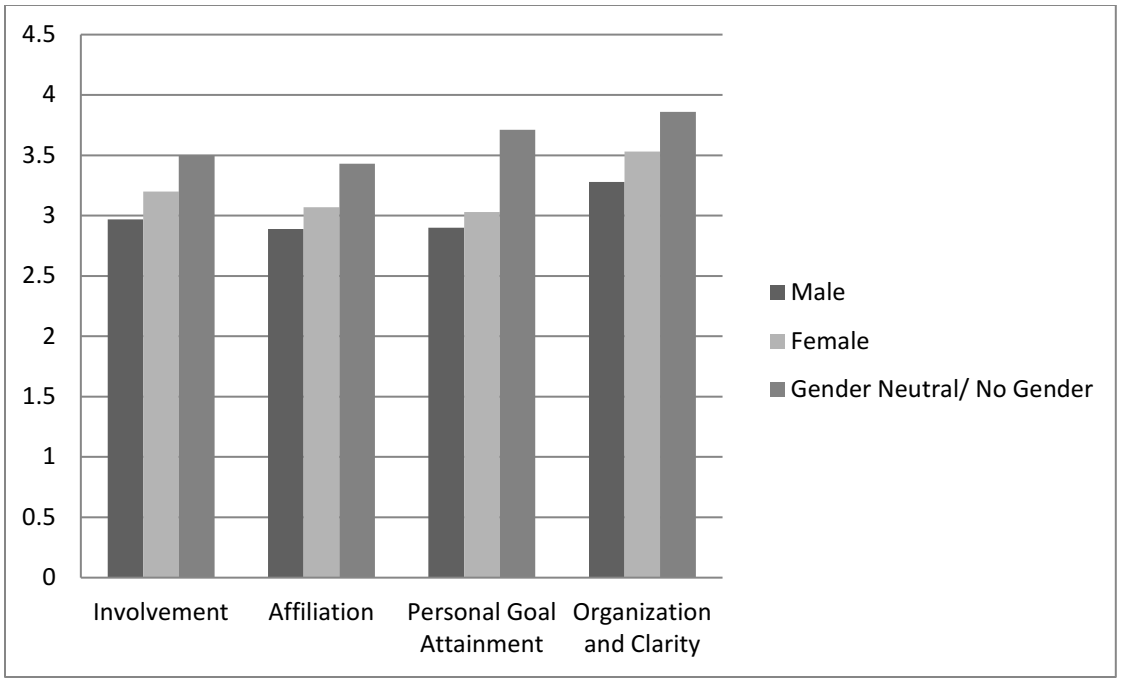

Figure 3. Comparison of online classroom environment ratings for the Adult Classroom Environment Scale dimensions by gender.

Due to the low response rates of some ethnic groups, the demographic of race had to be adjusted to allow for statistical analysis and responses were grouped into White, Black and Other. As seen in Table 5, race had a statistically significant effect [$F(2,167) = 3.91$, $p = 0.022$] on ratings of the ideal online classroom environment on the Adult Classroom Environment Scale dimension of affiliation with White students ($M = 3.09$, $SD = 0.56$) providing the highest ratings, Black students ($M = 3.04$, $SD = 0.55$) providing the second highest ratings, and Other students ($M = 2.68$, $SD = 0.58$) providing the lowest ratings. Post hoc comparisons using the Tukey HSD test indicated that the mean ratings from White students ($M = 3.09$, $SD = 0.56$) were significantly different than the mean ratings from Other students ($M = 2.68$, $SD = 0.58$). However, the mean ratings from Black students ($M = 3.04$, $SD = 0.55$) did not significantly differ from either White or Other student ratings.

Table 5 also shows that race had a statistically significant effect [$F(2,167) = 4.46$, $p = 0.013$] on ratings of the ideal online classroom environment on the Adult Classroom Environment Scale dimension of organization and clarity with White students ($M = 3.57$, $SD = 0.44$) providing the highest ratings, Black students ($M = 3.37$, $SD = 0.57$) providing the second highest ratings, and Other students ($M = 3.26$, $SD = 0.68$) providing the lowest ratings. Post hoc comparisons using the Tukey HSD test indicated that the mean ratings from White students ($M = 3.57$, $SD = 0.44$) were significantly different than the mean ratings from Black students ($M = 3.37$, $SD = 0.57$). However, the mean ratings from Other students ($M = 3.26$, $SD = 0.68$) did not significantly differ from either White or Black student ratings.

Table 5

ANOVA for Effect of Race on Online Classroom Environment Ratings

Adult Classroom Environment Scale Dimension	White		Black		Other				
	Mean	*SD*	Mean	*SD*	Mean	*SD*	*df*	*F*	*p*
Involvement	3.20	0.51	3.10	0.60	3.03	0.51	169	0.98	0.376
Affiliation	3.09	0.52	3.04	0.55	2.68	0.58	169	3.91	0.022*
Personal Goal Attainment	3.08	0.48	2.89	0.61	2.92	0.45	169	2.53	0.082
Organization and Clarity	3.57	0.44	3.37	0.57	3.26	0.68	169	4.46	0.013*

*$p \leq 0.05$

As seen in Figure 4, while only the ratings of affiliation and organization and clarity were significantly different, the means ratings of the four Adult Classroom Environment Scale dimensions by students of various races seem to follow a pattern with White students providing the highest ratings across all four dimensions. Additionally,

Black students provided the second highest rating on all dimensions accept for personal goal attainment where they provided the lowest rating. However, as seen on Figure 4, the mean ratings given by Black students on personal goal attainment were very similar to the mean ratings given by students of races other than White or Black. Similarly, other than on personal goal attainment where the ratings were similar to Black students, students of races other than White or Black provided the lowest mean ratings across the remaining dimensions. While there were significant differences found, it is seen in Figure 4 that all of the ratings were generally very high with no single rating by any race falling below an average rating of 2.5.

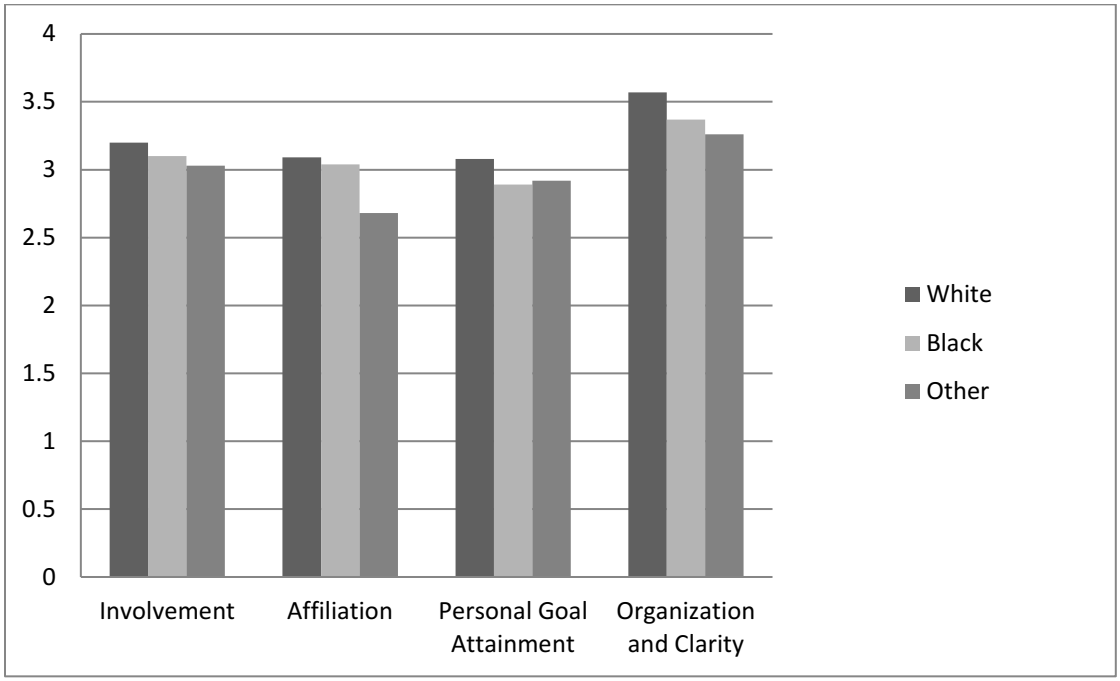

Figure 4. Comparison of online classroom environment ratings for the Adult Classroom Environment Scale dimensions by race.

Summary

In this study I explored what differences, if any existed between students' ratings of their ideal physical classroom environment on the Adult Classroom Environment Scale

dimensions of involvement, affiliation, personal goal attainment, and organization and clarity and students' ratings of their ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity. In addition, I attempted to discover if there existed any relationships between the demographics of age, gender or race and students' ratings of their ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity. After conducting various data analysis, some statistically significant results were found.

A paired samples *t* test revealed that there is a significant difference ($t(169) = -9.04$, $p < 0.001$) in students' ratings of personal goal attainment between physical and online classroom environments. Students' ratings of personal goal attainment in their ideal online Classroom environment ($M = 3.01$, $SD = 0.53$) were significantly higher than their ratings of their ideal physical classroom environment ($M = 2.70$, $SD = 0.44$). The effect size ($d' = 0.64$) was found to be slightly higher than a medium effect ($d' = 0.50$) (Cohen, 1988). While there were no other statistically significant findings from the paired samples *t* test, both affiliation ($t(169) = -1.82$, $p = 0.070$) and organization and clarity ($t(169) = 1.86$, $p = 0.065$) were close to being statistically significant.

An ANOVA was conducted with each of the four dimensions of interest from the Adult Classroom Environment Scale serving as dependent variables and each of the demographics serving as an independent variable. Of the three ANOVA's run, two of them returned significant results. The ANOVA run for the demographic of gender indicated that gender had a statistically significant effect [$F(2,167) = 3.81$, $p = 0.024$] on

ratings of the ideal online classroom environment on the Adult Classroom Environment Scale dimension of organization and clarity. A post hoc comparison using the Tukey HSD test further clarified that the mean ratings from female students (M = 3.53, SD = 0.46) were significantly different than the mean ratings from male students (M = 3.28, SD = 0.67).

The ANOVA run for race indicated that race had a statistically significant effect on ratings of the ideal online classroom environment on the Adult Classroom Environment Scale dimension of affiliation [$F(2,167) = 3.91$, $p = 0.022$] and the dimension of organization and clarity [$F(2,167) = 4.46$, $p = 0.013$]. For the dimension of affiliation post hoc comparisons using the Tukey HSD test specified that the mean ratings from White students (M = 3.09, SD = 0.56) were significantly higher than the mean ratings from Other students (M = 2.68, SD = 0.58). For the dimension of organization and clarity the post hoc comparisons using the Tukey HSD test designated that the mean ratings from White students (M = 3.57, SD = 0.44) were significantly higher than the mean ratings from Black students (M = 3.37, SD = 0.57). No other significant results were found for either gender or race, however, while not statistically significant, gender had a near significant effect on the dimension of involvement [$F(2,167) = 2.84$, $p = 0.061$]. No statistically significant results or nearly significant results were found for age at all.

Chapter V

CONCLUSIONS

Overview

The overarching purpose of this study was to discover what design elements students preferred for their ideal online classroom environment and how those preferences might differ from what students desired in their ideal physical classroom environment. Additionally, in this study I sought to understand what differences in an ideal online classroom environment might exist due to the common demographics of age, gender, or race. In order to best uncover those possible differences, the study was structured around the design of the classroom environment itself. It was decided early on to utilize the Adult Classroom Environment Scale created and used by Darkenwald since it was already established as a valid and reliable way to measure the Adult Classroom Environment in the physical environment (Darkenwald & Valentine, 1986).

The Adult Classroom Environment Scale was developed by Darkenwald and Valentine (1986) in response to need to assess the learning environment of adult learners. While the Classroom Environment Scale created by Trickett and Moos (1974) already existed, there was little research into the differences adult learners experienced in the classroom and it became apparent to Darkenwald and Valentine (1986) that a new measure was needed as the Classroom Environment Scale had never been validated for

usage on adult learners. By contrast, the Adult Classroom Environment Scale that Darkenwald and Valentine (1986) created was designed to specifically focus on adult learners in college level for credit courses. The final version of Adult Classroom Environment Scale consisted of seven measurement subscales; teacher support, task orientation, student influence, affiliation, involvement, personal goal attainment, and organization and clarity (Darkenwald & Valentine, 1986). The seven subscales each had seven corresponding questions which together formed the 49-item survey that became the Adult Classroom Environment Scale. Darkenwald and Valentine created three nearly identical forms of the Adult Classroom Environment Scale which only differed in instruction and intended respondent; one form instructed the student to respond based on their ideal learning environment, one form instructed the student to respond based on their actual learning environment, and the other form instructed the teacher to respond based on their actual learning environment.

Once established, Darkenwald used the Adult Classroom Environment Scale in a variety of studies on adult education including research into how to enhance the adult learning environment, dropout rates, gender differences in classroom environments, and class performance (Beer & Darkenwald, 1989; Darkenwald, 1989, Darkenwald & Gavin, 1987; Darkenwald & Novak, 1997). Since it was shown to be a reliable and validated instrument for use in research on adult learners, many other researchers also used the Adult Classroom Environment Scale as designed in their own research including Bartholomay (1996) who used the scale to identify needed changes in the classroom environments of a developmental course whose target audience was adult learners. Other researchers utilized the Adult Classroom Environment Scale, but with variations of

Darkenwald's original design, such as Kelly and Bronstein (2003) who utilized the scale in a study to measure the impact that providing feedback folders would have on adult learners in a course. In their study, Kelly and Bronstein (2003) altered the original application of the Adult Classroom Environment Scale by only providing the scale to students and only using the version of the form meant to measure the actual environment students were in and not using the ideal version at all.

Freddolino and Sutherland (2000) also used a modified version of the Adult Classroom Environment Scale design to determine if there were any differences in student's perceptions of an on campus classroom environment and their perceptions of a classroom environment provided at a distance via video based instruction. Like Kelly and Bronstein (2003), Freddolino and Sutherland (2000) only provided the half of the Adult Classroom Environment Scale meant to measure the actual environment to students enrolled in courses where the courses were being taught on-campus and at a distance via video at the same time. Freddolino and Sutherland found that there was not a significant difference in student perceptions of the classroom environment regardless of whether students were on site or received instruction at a distance via video. From these results Freddolino and Sutherland concluded that on-site classroom environment and the distance classroom environment were comparable to each other despite differences in student location when receiving instruction. Freddolino and Sutherland's study was important because it dealt with the examination of adult learners' perceptions of both physical and distance classroom environments. While Freddolino and Sutherland's used the scale with early forms of distance education, such as remote location video instruction, there has been very little research on using the Adult Classroom Environment

Scale in online classroom environments even though Freddolino and Sutherland recommended future research attempt to replicate their study using other variations of distance education.

While not using the Adult Classroom Environment Scale, a lot of research was conducted comparing the physical and online classroom environments though most focused either on the differences between the environments themselves or the differences between the roles of the instructors in course facilitation (Murphy & Cifuentes, 2001). Despite not using the Adult Classroom Environment Scale, most research in which online and physical classroom environments were compared, still tended to utilize some form of a survey; one example of this was the study conducted by Young and Duncan (2014) who compared student rating of courses taught online with those taught in the traditional physical setting by using two slightly different versions of a student instructional report survey. Even though they used a different measure, Young and Duncan employed procedures similar to Darkenwald's (1989) by utilizing two versions of the same survey, one to measure the physical classroom environment and one to measure the online classroom environment, and comparing students' ratings on the two measures to find where the significant differences were on multiple different subscales.

Young and Duncan (2014) matched data so they were comparing the same instructor and same course for the 11 pairs of courses taught both online and in a physical classroom. In their analysis, communication, grading, course outcomes, faculty/student interaction, and overall evaluation were all found to be rated significantly higher for the physical classroom course than the online course and the effect size was considered to be large (Young & Duncan, 2014). This led Young and Duncan to conclude that the

differences in rating were not necessarily the result of the course content or instructor themselves, but rather the ratings were related to the differences in the classroom environment itself and how instruction was presented.

This conclusion by Young and Duncan (2014) was supported by other researchers who also conducted research that concluded, in most cases, physical classroom courses seemed to offer components that were either missing in the online environment or were not successfully replicated by course designers (Gonzalez, 2012; Horspool & Lange, 2012). Among the research on the role differences of instructors in the online environment, several articles explored the value of instructional interactions in the online environment and concluded that the instructor's role in online classes was different but still important (Swan, 2001; Youngblood, Trede, & DeCorpo, 2001).

In addition, Swan (2001) revealed a separate element that contributed to student satisfaction of an online classroom environment was the course design itself and suggested that course design and instructor interactions in the online environments should be considered as independent factors towards determining student's success in an online classroom environment. Researchers supported Swan's conclusion that course design and instructional facilitation were separate factors and should be considered separate roles, but they argued as to whether or not having a separate individual for both roles best served the creation and implementation of the online classroom environment (Bates, 2005; Gonzalez, 2012; Horspool & Lange, 2012; Jeris & Poppie, 2002; Murphy & Cifuentes, 2001; Young & Duncan, 2014; Youngblood, Trede, & DeCorpo, 2001).

With the Adult Classroom Environment Scale's composition of both a measure of the instructor's facilitation and a course's design, it was interesting that more researchers

had not utilized the measure in their research of online environments despite researchers such as Moskal, Dziuban, and Hartman (2010) who concluded that an instrument like it would have been useful in their study. Further, the Adult Classroom Environment's seven dimensions seem to fall into the same two categories of course design or instructor facilitation that researchers tend to divide online classroom environment research into. Specifically for this study, I looked at the dimensions related to course design, which included involvement, affiliation, personal goal attainment, and organization and clarity. Each of these dimensions was found to be related to some aspect of online course design and were each important in their own way (Jain & Jain, 2015; Ralston-Berg, 2014; Rao & Tanners, 2011; Singh, 2013; Tayebinik & Puteh, 2013; Wanner & Palmer, 2015). Due to their relationship to the design of the online Course Environment, these four dimensions of the Adult Classroom Environment Scale were included in the final design of this study.

When looking at the different elements that make up a course's design, another aspect that researchers argued online course designers needed to account for was possible differences in students' preferences due to various demographic factors (Ashong & Commander, 2012). Often research on the demographic influences tended to focus on the three most common differences; age, gender, and race (Ashong & Commander, 2012; Ausburn, 2004; Garland & Martin, 2005). While there are other possible learner characteristics that could be connected to a difference in learners' preferences, age, gender, and race seem to be particularly prevalent in research involving online learning (Ashong & Commander, 2012; Ausburn, 2004; Garland & Martin, 2005). So in addition to the four dimensions of the Adult Classroom Environment Scale related to course

design, the demographic differences of age, gender, and race were included in the final design of this study.

Design and Procedures

The focus of this study was to aid those instructors moving from designing classes in a physical classroom environment to designing classes in an online classroom environment. Following cues from previous research, through this study I sought to answer the question of whether or not there was a significant difference between adult learner perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity. To accomplish this, a simple inferential study was used with the independent variable of adult learner perceptions of an ideal physical classroom environment as measured by the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity and a dependent variable of adult learners' perceptions of an ideal online classroom environment as measured by the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity.

I also sought to discover if there was a significant difference between adult learners' age, gender, race, and adult learners' perceptions of an ideal online classroom environment as measured on the Adult Classroom Environment Scale. For this question, a more complex inferential design was utilized with the independent variables being; adult learners' age, adult learners' gender, and adult learners' race and the dependent variable being adult learners' perceptions of an ideal online classroom environment as

measured by the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity.

To find answers to these questions and make the results as usable as possible by the instructors they were intended to benefit, the population selected for the study was adult learners of various age, gender and race that were currently or recently enrolled in a physical and/or online course at Valdosta State University. Specifically, the participants of this study were n = 170 students whose age ranged from 18 to 69, with a mean age of 26.68 years. Of the n = 170 students, n = 134 students reported to be female, n = 34, reported to be male, and n = 2 students reported themselves as gender neutral or No Gender. Additionally, n = 102 students self-identified as White, n = 53 students self-identified as Black, and the remaining n = 15 student selected another race or declined to provide an answer. Participation in the study was voluntary with participation recruitment having been conducted through email and various social media outlets.

Students who volunteered to participant in the study accessed it via a link to an online survey that was a slightly modified version of the Adult Classroom Environment Scaled originally developed by Darkenwald and Valentine (1986). The survey items were provided to participants with a 4-point response scale which ranged from strongly disagree to strongly agree (see Appendix B). The items used to create the Adult Classroom Environment Scale were restructured into the online version of the instrument, however, other than the delivery method itself, none of the items, scales, or structure of the instrument was changed. However, three questions were added at the end to collect the demographic data pertaining to age, gender, and race (see Appendix B).

Similar to alterations by other researchers using the Adult Classroom Environment Scale, like Freddolino and Sutherland (2000) or Kelly and Bronstein (2003), I utilized two versions of the survey in this study; one asked adult learners to rate their ideal version of a physical classroom and the other version asked adult learners to rate their ideal version of an online classroom (see Appendix B). Participants took both versions, but the two versions of this online survey were given to participants in a random order. This was done in order to help control for any possible extraneous variables such as a priming effect or participant fatigue. After completing the 98 initial items of the survey, participants were then asked the three additional demographic questions that addressed their age, gender, and race.

Once completed, survey data was collected and saved directly to the Qualtrics servers where it would later be downloaded and analyzed once the survey had closed and all data collected. Responses were downloaded from Qualtrics and uploaded into the data analysis program Statistical Package for the Social Sciences (SPSS) for analysis. First, the Adult Classroom Environment Scale used for the ratings of ideal physical classroom environment and the Adult Classroom Environment Scale used for the ratings of the ideal online classroom environment were scored by taking the average rating across the seven questions used for each of the four subscales relevant to this study (see Appendix E).

In order to compare the ratings of adult learners' ideal physical classroom environment and their ideal online classroom environment, a paired samples *t* test was used to compare these two ratings on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and

clarity. To determine the relationship between the demographics of age, gender, or race, and adult learners' perceptions of an ideal online classroom environment, an ANOVA was conducted with each of the four dimensions of interest from the Adult Classroom Environment Scale serving as dependent variables and each of the demographics serving as an independent variable. Three ANOVAs were run in total, one for adult learner age, one for adult learner gender, and one for adult learner race. For both of these analyses the significance threshold was set at .05.

Summary of Results

The data gathered for this study was analyzed and used to answer two key research questions:

1. Is there a significant difference between adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity?
2. To what extent is there a significant difference between adult learners' age (young adults ages 18-24, working-age adults ages 25-64, and older adults ages 65 and older), gender, race, and adult learners' perceptions of an ideal online classroom environment as measured on the Adult Classroom Environment Scale?

The paired samples *t* test that was used to determine differences between ratings of physical and online classroom environments revealed that there is a significant difference ($t(169) = -9.04$, $p < 0.001$) in students' ratings of personal goal attainment.

Students' ratings of personal goal attainment in their ideal online Classroom environment (M = 3.01, SD = 0.53) were significantly higher than their ratings of their ideal physical classroom environment (M = 2.70, SD = 0.44) and the effect size (d' = 0.64) was found to be slightly higher than a medium effect (d' = 0.50) (Cohen, 1988). While there were no other statistically significant findings from the paired samples t test, both affiliation ($t(169) = -1.82$, $p = 0.070$) and organization and clarity ($t(169) = 1.86$, $p = 0.065$) were close to being statistically significant.

The ANOVAs run on the data resulted in three significant findings. The ANOVA for the demographic of gender found that gender had a statistically significant effect [$F(2,167) = 3.81$, $p = 0.024$] on ratings of the ideal online classroom environment on the Adult Classroom Environment Scale dimension of organization and clarity. A post hoc comparison indicated that the mean ratings from female students (M = 3.53, SD = 0.46) were significantly different than the mean ratings from male students (M = 3.28, SD = 0.67). In addition, the ANOVA run for race found that race had a statistically significant effect on ratings of the ideal online classroom environment on the Adult Classroom Environment Scale dimension of affiliation [$F(2,167) = 3.91$, $p = 0.022$]. According to the post hoc comparisons the mean ratings from White students (M = 3.09, SD = 0.56) were significantly higher than the mean ratings from Other students (M = 2.68, SD = 0.58). Finally, the ANOVA run for race demonstrated that race had a statistically significant effect on ratings of the dimension of organization and clarity [$F(2,167) = 4.46$, $p = 0.013$] and the post hoc comparisons indicated that the mean ratings from White students (M = 3.57, SD = 0.44) were significantly higher than the mean ratings from

Black students ($M = 3.37$, $SD = 0.57$). The ANOVAs that were run did not show any other significant results.

Discussion and Implications

The results of the analysis answered the two questions posed at the beginning of this study and aided the overall goal of providing information on where to focus when designing a course for an online classroom environment. Even though only a few significant differences were indicated through the results, and some of those differences were very small, the results still help to serve as a guide to online course design even if it does not provide a definitive blueprint. Perhaps more informative were the areas that did not show any significance as they are also able to shed light on where universal attention needs to be paid regardless of the type of classroom environment.

Research Question 1

The results of the paired samples *t* test helped answer the question of whether or not there were significant differences between adult learners' perceptions of an ideal physical classroom environment and their perceptions of an ideal online classroom environment on the Adult Classroom Environment Scale dimensions of involvement, affiliation, personal goal attainment, and organization and clarity. According to the results the only area with significantly different ratings was that related to the dimension of personal goal attainment ($t(169) = -9.04$, $p < 0.001$). According to the results, students rating the importance of personal goal attainment for their ideal online classroom environment ($M = 3.01$, $SD = 0.53$) rated it higher than those who were rating it for their ideal physical classroom environment ($M = 2.70$, $SD = 0.44$). This seems to indicate that students value personal goal attainment more when envisioning an online course than

they do when considering a physical course and suggests that when designing an online course, one should include more opportunities for personal goal attainment than they might in an equivalent physical course. This is similar to the findings of Wanner and Palmer (2015) who discovered that students tended to highly value personalized learning opportunities in their own courses.

The effect size for this significant difference (d' = 0.64) was found to exceed Cohen's (1988) convention for a medium effect (d' = 0.50). In a similar study conducted by Young and Duncan (2014), the significant differences found only yielded a small effect size and was considered as questionable or too small to be relevant. The effect size generated here was higher, so it is more likely that the differences in the ratings on personal goal attainment are important to consider, however, since it was not a large effect size, it would not be something vital enough to be considered a cornerstone of a design. Despite this, these differences can still be used to guide design choices for an online course and should be something that is considered when moving from designing courses for the physical classroom environment to designing them for the online classroom environment.

Another interesting finding of the paired samples *t* test was the near significant differences found on both affiliation ($t(169) = -1.82$, $p = 0.070$) and organization and clarity ($t(169) = 1.86$, $p = 0.065$). The near-significance of these differences may have been a result of a low sample size and one must wonder whether or not a larger sample would have yielded significantly different ratings on these two dimensions. Previous research pertaining to the difference between the online and physical classroom environments suggest that indeed more significant differences should have been found

and give reason to suspect that the near-significant differences found here might be found as significant in a follow up study (Gonzalez, 2012; Horspool & Lange, 2012; Moskal, Dziuban, & Hartman, 2010; Murphy & Cifuentes, 2001; Young & Duncan, 2014). Since their differences were closer to being significant, when considering the difference between designing for a physical and online classroom environment, after personal goal attainment a designer may want to consider organization and clarity and then affiliation when deciding where to focus.

Clearly, the dimension of involvement, which was not as close to having a significant difference ($t(169) = -0.10$, $p = 0.923$) as the other dimensions were, can be considered as the area of least design change between the physical and online classroom environment. Additionally, the mean ratings between the physical ($M = 3.16$, $SD = 0.56$) and online ($M = 3.15$, $SD = 0.54$) ideal classroom environments were almost identical. It is likely that the difference in means is meaningless and should not be considered as more important in either the physical or online classroom environment.

It is arguable that the lack of significant differences on the Adult Classroom Environment Scale could be perceived as a positive result as it reduces the number of differences instructors need to consider when moving from designing physical classroom environments to designing online classroom environments. This view that no significant difference would be a good thing would be supported by Freddolino and Sutherland (2000) who were actually looking for student ratings on the Adult Classroom Environment Scale to remain the same and show no significant difference between the two groups they studied. Their study also utilized students being taught at a distance, but

they used the Adult Classroom Environment Scale surveys asking for the actual environment rather than the ideal environment that was used in this study.

The fact that the survey used in this study instructed participants to rate their ideal environments may have also contributed the lack of significant differences because, as seen in Table 2, none of the mean ratings of any of the Adult Classroom Environment Scale dimensions go below $M = 2.7$ regardless of the type of classroom environment. This could be an indication that students rating their ideal environments simply provided high ratings on all dimensions; perhaps in their ideal classroom environment they considered each aspect to be important. This would certainly be a view supported by the various researchers who found that each of the four dimensions studied were important to course design (Jain & Jain, 2015; Ralston-Berg, 2014; Rao & Tanners, 2011; Singh, 2013; Tayebinik & Puteh, 2013; Wanner & Palmer, 2015).

Research Question 2

Like the paired samples *t* test, the results of the multiple ANOVAs also yielded few significant differences, but it did answer the question of whether or not there were any significant differences between adult learners' age, gender, or race, and adult learners' perceptions of an ideal online classroom environment as measured on the Adult Classroom Environment Scale. From reviewing the results of the analysis, I found three significant effects: one with regard to gender and the dimension of organization and clarity, one with regard to race and the dimension of affiliation, and one with regard to race and the dimension of organization and clarity. Notably, no significant effects were found with regard to age.

Like the results of the paired samples *t* test, the lack of significant effect with regard to age could be viewed as a positive as it frees designers of online classroom environments from needing to design online courses to fit specific needs of different aged populations. While some researchers like Ausburn (2004) found differences among different ages of adult learners, most research on adult learners simply found differences only between adult learners and traditional students (DiBiase & Kidwai, 2010; Chyung, 2007). So while it would have been supported by previous research if a significant effect was found, the lack of significant differences is not completely unexpected either.

With regards to the results of the gender analysis, there was a significant effect for the Adult Classroom Environment Scale dimension of organization and clarity [$F(2,167) = 3.81$, $p = 0.024$]. The results suggested that female students ($M = 3.53$, $SD = 0.46$) significantly rated organization and clarity for their ideal online classroom environment higher than male students ($M = 3.28$, $SD = 0.67$) did. This data suggests that if your student population for an online course tends more toward female students, your online course design may need to focus more on organization and clarity than it would if your student population was mostly male. This is supported by previous research that suggested there exist some differences between what female and male students prefer in an online course (Ashong & Commander, 2012; Ausburn, 2004; Garland & Martin, 2005). While there was a significant effect, the average mean rating from both females and males were still both very high. This seems to suggest that while an online classroom environment with a largely female population may need to be designed with organization and clarity specifically in mind, it is not something that should be completely disregarded even if the population of students is mostly male.

The dimension of organization and clarity not only had a significant relationship with gender, but it also had a significant relationship with race. With regards to the results of the race analysis, there was a significant effect for the Adult Classroom Environment Scale dimension of organization and clarity [$F(2,167) = 4.46$, $p = 0.013$] and separately there was a significant effect for affiliation [$F(2,167) = 3.91$, $p = 0.022$]. From these results it was found that White students ($M = 3.57$, $SD = 0.44$) significantly rated organization and clarity for their ideal online classroom environment higher than Black students ($M = 3.37$, $SD = 0.57$). It was also discovered that White students ($M = 3.09$, $SD = 0.56$) significantly rated affiliation for their ideal online classroom environment higher than Other students ($M = 2.68$, $SD = 0.58$).

Taken together these data suggest that if your student population tends more toward White students, your online course design may need to focus more on organization and clarity than it would if your population was mostly comprised of Black students and should focus more on affiliation than it would if your targeted population was mostly students of ethnicities other than White or Black. These data seem to be supported by previous studies that found significant differences with how students with different ethnic backgrounds rated various elements of online course design (Ashong & Commander, 2012). While there was a significant effect on how White and Black students rated the dimension of organization and clarity for their ideal online classroom environment, the average mean rating from both White and Black students were still both very high. This seems to suggest that while an online classroom environment with a largely White population may need to be designed with organization and clarity

specifically in mind, but, like with gender, it is not something that should be completely disregarded even if the population of students is largely Black.

Unlike organization and clarity, the average mean rating by White students on affiliation was over a half point higher than that of an ethnicity other than White or Black. This seems to indicate that affiliation might be something that should considered as more important in an online classroom environment with a largely White population than it would be if the population was students from racial backgrounds other than White or Black. However, this could be a false assumption as the grouping of Other students was created due to a low response rate from races that were not White or Black. It is possible that while these data suggest that it was a significant effect, a student from any given race that was underrepresented in this study may not actually have less of an interest in the dimension of affiliation than a White student. If the population studied had resulted in more responses from students of ethnic backgrounds other than White or Black, effect of race on affiliation would be clearer.

Limitations to the Study

There were a few specific limitations to this study that most likely contributed to the near-significance of certain data and the inability to draw certain general conclusions about the data. The lack of responses from students with an ethnic background other than White or Black was a clear limitation of this study. In its original design, the data would have been analyzed using various different ethnic backgrounds against the four studied dimensions of the Adult Classroom Environment Scale. However, because of the low response rate, participants who reported that they were American Indian or Alaska Native, Asian/Pacific Islander, Hispanic or Latino, and Other were combined into a

single category of Other in order to perform statistical analyses. According to the results, there was a significant effect between White students and students in the Other group, but because the Other group contained the combined data from students of different ethnic backgrounds, a specific generalization could not be reached.

Another clear limitation of this study seems to have been survey fatigue. Originally there were 321 responses to survey, which if used could have yielded greater significance in areas that almost had a significant difference. However, this initial response rate contained 151 participants who had to be removed from the sample because of a large amount of missing responses in their surveys. A lot of these responses seemed to answer several survey questions before stopping and submitting their partial surveys. Since the survey contained 101 total questions, it is likely that participants became uninterested in completing the survey and simply stopped. This was not reported to be an issue with original studies utilizing the paper and pencil versions of the Adult Learning Environment Scale which still contained at least 98 items. The lack of survey fatigue in those studies may be due to those studies being largely conducted with students who were rating their ideal and actual classroom environments, so they had a vested interest in finishing the survey as opposed to those in this study who were only rating a hypothetical ideal environment and were volunteering to participate (Beer & Darkenwald, 1989; Darkenwald, 1989, Darkenwald & Gavin, 1987; Darkenwald & Novak, 1997; Darkenwald & Valentine, 1986).

A final possible limitation is a possible extraneous variable of previous exposure to one or both online and physical classroom environments. As part of this study I utilized a survey which only required students to imagine and answer questions based

their ideal of a hypothetical online and an ideal hypothetical physical classroom environment. Since it was not a requirement that participants have previous experience with a specific type of classroom environment, no data was recorded concerning previous course experiences. The populations studied would have had experience with one or both of these types of classroom environments, but the full extent of these experiences and the amount of individuals with experience with only one of the two types of classroom environments is unknown. It is possible that having only previous experience with one type of classroom environment could influence how a participant responded to the survey and could explain why a number of participants seemed to rate the two types of classroom environments in a similar manner. Further, it is also technically possible that there was a disproportionate amount of participants who had only experienced one of the types of classroom environments, either online or physical, and the data were skewed as a consequence.

Recommendations for Future Research

As one of the major limitations of this study related to the limited sample size and the lack of ethnic diversity in the final sample, an initial recommendation would be to simply replicate this study in a broader context. I would recommend extending this study to student's in multiple universities throughout a single state system such as the University System of Georgia. With a much larger population to sample from, the other major limitation could also be addressed and data could be collected only from students who had previous experiences with both types of classroom environments. Given the prevalence of nearly significant differences found in this study, it seems likely that a

replication of this study using a larger and more diverse sampled population could possibly find more significant results.

Another recommendation for a future study is derived in from the differences in how I used the Adult Classroom Environment Scale in this study and how it was originally used by Darkenwald and Valentine (1986). Now that research has been done comparing the ideals of the physical and online classroom environments, the next step should be to research the ideal and actual online classroom environment. This usage is more similar to what Darkenwald and Valentine (1986) had originally intended the Adult Classroom Environment Scale for even though they only had used it for physical classroom environments. Since there were not many significant differences between the physical and online classroom environment found in this study, it would seem reasonable that the usage of the Adult Classroom Environment Scale to measure the differences between the ideal and actual classroom environment of an online class should be as functional as when it is used for physical classroom environments.

One final recommendation would be to follow up with the significant difference between the online and physical classroom environments found in this study. A further study focusing on just the dimension of personal goal attainment could be conducted in order to validate the existence of this difference and to further explore why the difference may exist. Additionally, such a study might attempt to further reduce the elements of personal goal attainment into core components in order to explore exactly which elements of personal goal attainment students' consider more important than others. Such research would greatly benefit designers of online classroom environments as it would help further narrow the elements that should be given the most attention during the design process.

Conclusion

The driving force behind this study was a need provide information that would help instructors transitioning from designing physical classroom environments to designing online classroom environments. To serve this end, I sought to compare the ratings of the ideal physical classroom environment and the ideal online classroom environment on the four dimension of the Adult Classroom Environment Scale relatable to course design; involvement, affiliation, personal goal attainment, and organization and clarity. Additionally, through this study I sought to explore the relationships between the common demographic differences of age, gender, and race and ratings of those students' ideal online classroom environment. Based on the results obtained from the data analysis, the following conclusions are made.

1. Personal goal attainment is more important to a student's conception of their ideal online classroom environment than their ideal physical classroom environment.
2. Organization and clarity is more important to a female student's conception of their ideal online classroom environment than a male student's conception their ideal online classroom environment.
3. Organization and clarity is more important to a White student's conception of their ideal online classroom environment than a Black student's conception their ideal online classroom environment.
4. Affiliation is more important to a White student's conception of their ideal online classroom environment than the conception of an ideal online

classroom environment of a student that is of a race that is neither White nor Black.

While the effect size for these conclusions was not large and the differences between mean ratings not that far apart, these results still provide a basic guideline of where to focus on the design of online classroom environments when designing classes for students at Valdosta State University. Following this guideline, it is best for designers of online Classroom environments to focus on personal goal attainment whereas they may not need to have provided as much attention to this area when designing their physical classroom environment. Further, depending on the targeted population for a given online course, additional guidelines for focus may be applicable such as organization and clarity if your student population is mostly female and both affiliation and organization and clarity if your student population for a course is largely White.

While not the comprehensive blueprint that would have been ideally generated through this research, these guidelines serve to aid in the initial problem faced at the beginning of this study. These guidelines are meant to assist instructors who are new to the concept of designing an online classroom environment. To that end, these initial guidelines will serve as a foundation on which a larger model for online classroom environment design can be further developed through additional research. In the interim, these guidelines will fulfill their purpose and aid those instructors transitioning to designing online classroom environments at Valdosta State University.

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APPENDIX A:

Participant Solicitation Email

Attention VSU students,

We are conducting a research study on VSU student's preferences in both online and face to face courses. Students who participate will be asked to rank descriptions of their ideal online classroom and ideal face to face classroom. If you would like to participant please follow this link to learn more about the study and answer the questionnaire https://valdosta.co1.qualtrics.com/SE/?SID=SV_d5bRgz627nQEh1j.

This survey is anonymous. No one, including the researchers, will be able to associate your responses with your identity. Your participation is voluntary. You may choose not to take the survey, to stop responding at any time, or to skip any questions that you do not want to answer. You must be at least 18 years of age to participate in this study.

Along with the study we are also doing a drawing for 4 $25 Amazon Gift cards. Participants in the study will receive a message at the end of the survey with a link to a separate survey to collect their entry into the drawing. Individuals who participate in the study will not have their results connected in any way to their participation in the drawing. Separate surveys are used so that no information that is collected on one survey is connected to the other and study participants will receive the link regardless of whether or not they answer all or any of the questions in the study.

For questions regarding the purpose or procedures of the research or if you would like to receive information about the results of this study once it has completed, please contact the researcher Vincent Spezzo at vmspezzo@valdosta.edu. This study has been exempted from Institutional Review Board (IRB) review in accordance with Federal regulations. The IRB, a university committee established by Federal law, is responsible for protecting the rights and welfare of research participants. If you have concerns or questions about your rights as a research participant, you may contact the IRB Administrator at 229-259-5045 or irb@valdosta.edu.

Thank you,

Researchers

Vincent Spezzo
vmspezzo@valdosta.edu

Amanda King
ajking@valdosta.edu

Additional information about the drawing:

The drawing will occur on Dec. 12th, 2016, at 1 pm and will be conducted by a third party individual whom is not associated with the research study titled "Using the Adult Classroom Environment Scale to Determine Developmental Focus for Online Course Instructors." All entrants will be assigned a number at random by a computer program and then the individual conducting the drawing will randomly select 4 winning numbers. All drawing entrants will be sent a list of winner's via email within 1 week of the drawings completion. Winners will be sent individual emails with instructions on how to claim their prize. All prizes must be picked up within 3 months of the drawing or be subject to forfeit. Please note this raffle is open to any individual regardless of full, partial, or no participation in the research study titled "Using the Adult Classroom Environment Scale to Determine Developmental Focus for Online Course Instructors." with the exception of those under the age of 18, persons who reside outside of the United States, the person conducting the drawing, the researchers involved in the projected titled "Using the Adult Classroom Environment Scale to Determine Developmental Focus for Online Course Instructors.", any individuals with direct interest in the research study, and any of the aforementioned individual's direct family members. Participation in the research study titled "Using the Adult Classroom Environment Scale to Determine Developmental Focus for Online Course Instructors." does not increase your odds of winning the drawing. If you would like to entry the drawing without participating in the research study, you may do so by following this link https://valdosta.co1.qualtrics.com/SE/?SID=SV_3O9ER2sk44PYhP7 . Only 1 entry per person will be accepted and duplicate entries will be removed prior to the drawing.

APPENDIX B:

Adult Classroom Environment Scale as Used in This Study

You are being asked to participate in a survey research project entitled "Using the Adult Classroom Environment Scale to Determine Developmental Focus for Online Course Instructors" which is being conducted by Vincent Spezzo, a Student and Staff member at Valdosta State University.

This survey is anonymous. No one, including the researcher, will be able to associate your responses with your identity. Your participation is voluntary. You may choose not to take the survey, to stop responding at any time, or to skip any questions that you do not want to answer. You must be at least 18 years of age to participate in this study. Your completion of the survey serves as your voluntary agreement to participate in this research project and your certification that you are 18 or older.

Questions regarding the purpose or procedures of the research should be directed to Vincent Spezzo at vmspezzo@valdosta.edu. This study has been exempted from Institutional Review Board (IRB) review in accordance with Federal regulations. The IRB, a university committee established by Federal law, is responsible for protecting the rights and welfare of research participants. If you have concerns or questions about your rights as a research participant, you may contact the IRB Administrator at 229-259-5045 or irb@valdosta.edu.

Directions: The purpose of this questionnaire is to find out what your ideal face to face class is like. This is not a test. There are no right or wrong answers. Please give your honest opinions about your ideal face to face class. Your answers are confidential. The questionnaire will take you about 10 minutes to complete. We thank you in advance for taking the time to complete the questionnaire carefully. For EACH of the statements below, go through the following steps:• Read the statement carefully and decide how well it describes your ideal face-to-face class.• Indicate your opinion by selecting one of the choices provided. Be sure to mark a choice for each and every statement; please do not leave any blanks.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Students help to decide the topics to be covered in class	❍	❍	❍	❍
The class is flexible enough to meet the needs of individual students	❍	❍	❍	❍
The teacher comes to class prepared	❍	❍	❍	❍
Students are often bored in the class	❍	❍	❍	❍
The teacher seldom talks about things not related to the course	❍	❍	❍	❍
Many students think the class is not relevant to their lives	❍	❍	❍	❍
Students often ask the teacher questions	❍	❍	❍	❍
The students in the class work well together	❍	❍	❍	❍
Learning objectives were made clear at the start of the course	❍	❍	❍	❍
The teacher makes all the decisions in the class	❍	❍	❍	❍
Most students	❍	❍	❍	❍

enjoy the class				
The teacher expects every student to learn the exact same things	❍	❍	❍	❍
Students in the class can select assignments that are of personal interest to them	❍	❍	❍	❍
The teacher makes little effort to help students succeed	❍	❍	❍	❍
The teacher talks down to students	❍	❍	❍	❍
Students regularly meet assignment deadlines	❍	❍	❍	❍
Students often share their personal experiences during class	❍	❍	❍	❍
Students often discuss things not related to course content	❍	❍	❍	❍
Activities not related to course objectives are kept to a minimum	❍	❍	❍	❍
Most students look forward to the class	❍	❍	❍	❍
Most students in the class pay attention to what the teacher is	❍	❍	❍	❍

saying				
The class is well organized	❍	❍	❍	❍
The teacher encourages students to do their best	❍	❍	❍	❍
Students do a lot of work in the class	❍	❍	❍	❍
A few students dominate the discussions in class	❍	❍	❍	❍
The class lacks a clear sense of direction	❍	❍	❍	❍
The subject matter is adequately covered	❍	❍	❍	❍
The teacher sticks to the lesson plan regardless of student interest	❍	❍	❍	❍
Most students take part in class discussions	❍	❍	❍	❍
Students do not know what is expected of them	❍	❍	❍	❍
The students in the class learn little from one another	❍	❍	❍	❍
Most students in the class achieve their personal learning goals	❍	❍	❍	❍
The students in	❍	❍	❍	❍

the class enjoy working together				
The teacher cares about students' feelings	❍	❍	❍	❍
The teacher tries to find out what individual students want to learn	❍	❍	❍	❍
Getting work done is very important in the class	❍	❍	❍	❍
Students participate in setting course objectives	❍	❍	❍	❍
The class is more a social hour than a place to learn	❍	❍	❍	❍
The teacher rarely dominates classroom discussion	❍	❍	❍	❍
The teacher respects students as individuals	❍	❍	❍	❍
Learning activities follow a logical sequence	❍	❍	❍	❍
Students seldom interact with one another during class	❍	❍	❍	❍
Students have the opportunity to learn at their	❍	❍	❍	❍

own pace				
The teacher likes the students in the class	❍	❍	❍	❍
Students in the class feel free to disagree with one another	❍	❍	❍	❍
Friendships have developed in the class	❍	❍	❍	❍
Students feel free to question course requirements	❍	❍	❍	❍
The teacher cares whether or not the students learn	❍	❍	❍	❍
The teacher seldom insists that you do things his or her way	❍	❍	❍	❍

Directions: The purpose of this questionnaire is to find out what your ideal online class is like. This is not a test. There are no right or wrong answers. Please give your honest opinions about your ideal online class. Your answers are confidential. The questionnaire will take you about 10 minutes to complete. We thank you in advance for taking the time to complete the questionnaire carefully. For EACH of the statements below, go through the following steps:• Read the statement carefully and decide how well it describes your ideal face-to-face class.• Indicate your opinion by selecting one of the choices provided. Be sure to mark a choice for each and every statement; please do not leave any blanks.

	Strongly Disagree	Disagree	Agree	Strongly Agree
Students help to decide the topics to be covered in class	❍	❍	❍	❍
The class is flexible enough to meet the needs of individual students	❍	❍	❍	❍
The teacher comes to class prepared	❍	❍	❍	❍
Students are often bored in the class	❍	❍	❍	❍
The teacher seldom talks about things not related to the course	❍	❍	❍	❍
Many students think the class is not relevant to their lives	❍	❍	❍	❍
Students often ask the teacher questions	❍	❍	❍	❍
The students in the class work well together	❍	❍	❍	❍
Learning objectives were made clear at the start of the course	❍	❍	❍	❍
The teacher makes all the decisions in the class	❍	❍	❍	❍
Most students	❍	❍	❍	❍

enjoy the class				
The teacher expects every student to learn the exact same things	❍	❍	❍	❍
Students in the class can select assignments that are of personal interest to them	❍	❍	❍	❍
The teacher makes little effort to help students succeed	❍	❍	❍	❍
The teacher talks down to students	❍	❍	❍	❍
Students regularly meet assignment deadlines	❍	❍	❍	❍
Students often share their personal experiences during class	❍	❍	❍	❍
Students often discuss things not related to course content	❍	❍	❍	❍
Activities not related to course objectives are kept to a minimum	❍	❍	❍	❍
Most students look forward to the class	❍	❍	❍	❍
Most students in the class pay attention to what the teacher is	❍	❍	❍	❍

saying				
The class is well organized	❍	❍	❍	❍
The teacher encourages students to do their best	❍	❍	❍	❍
Students do a lot of work in the class	❍	❍	❍	❍
A few students dominate the discussions in class	❍	❍	❍	❍
The class lacks a clear sense of direction	❍	❍	❍	❍
The subject matter is adequately covered	❍	❍	❍	❍
The teacher sticks to the lesson plan regardless of student interest	❍	❍	❍	❍
Most students take part in class discussions	❍	❍	❍	❍
Students do not know what is expected of them	❍	❍	❍	❍
The students in the class learn little from one another	❍	❍	❍	❍
Most students in the class achieve their personal learning goals	❍	❍	❍	❍
The students in	❍	❍	❍	❍

the class enjoy working together				
The teacher cares about students' feelings	❍	❍	❍	❍
The teacher tries to find out what individual students want to learn	❍	❍	❍	❍
Getting work done is very important in the class	❍	❍	❍	❍
Students participate in setting course objectives	❍	❍	❍	❍
The class is more a social hour than a place to learn	❍	❍	❍	❍
The teacher rarely dominates classroom discussion	❍	❍	❍	❍
The teacher respects students as individuals	❍	❍	❍	❍
Learning activities follow a logical sequence	❍	❍	❍	❍
Students seldom interact with one another during class	❍	❍	❍	❍
Students have the opportunity to learn at their	❍	❍	❍	❍

own pace				
The teacher likes the students in the class	❍	❍	❍	❍
Students in the class feel free to disagree with one another	❍	❍	❍	❍
Friendships have developed in the class	❍	❍	❍	❍
Students feel free to question course requirements	❍	❍	❍	❍
The teacher cares whether or not the students learn	❍	❍	❍	❍
The teacher seldom insists that you do things his or her way	❍	❍	❍	❍

What is your age?

❍ Between 18-24 years old
❍ Between 25-64 years old
❍ 65 or older

Please indicate the gender you most identify yourself as.

❍ Male
❍ Female
❍ Gender Neutral/No Gender

Ethnicity origin (or Race): Please specify the ethnicity you most identify yourself as.

- ❍ White
- ❍ Black or African American
- ❍ American Indian or Alaska Native
- ❍ Asian/ Pacific Islander
- ❍ Hispanic or Latino
- ❍ Other

Thank you for Participating in my study. For questions regarding the purpose or procedures of the research or if you would like to receive information about the results of this study once it has completed, please contact the lead researcher Vincent Spezzo at vmspezzo@valdosta.edu. Please do not forget to also participate in the drawing associated with this study for your chance to win 1 of 4 $25 Amazon gift cards. Follow this link to enter: https://valdosta.co1.qualtrics.com/SE/?SID=SV_3O9ER2sk44PYhP7.

APPENDIX C:

Permission to Use Adult Classroom Environment Scale

From: Joan Darkenwald [mailto:joan@thedecolas.com]
Sent: Sunday, August 04, 2013 4:46 PM
To: Amanda J King; Vincent M Spezzo
Subject: contacting Dr. Darkenwald

Amanda j. King-Spezzo,abd & Vincent m. King-Spezzo,abd:

YOU HAVE MY PEMISSION TO UE aces FIR YIUR DUSSERTATION RESEARCHi DO NOT HAVE AN E-MAIL ACCOUNT. You can reach me by phone at [908] 658-3755.

Gordon darkenwald

NOTE: A follow up call was conducted between the researchers and Darkenwald to clarify the nature and extent of the permission to use the Adult Classroom Environment Scale.

APPENDIX D:

Institutional Review Board Approval

Institutional Review Board (IRB)
for the Protection of Human Research Participants

PROTOCOL EXEMPTION REPORT

PROTOCOL NUMBER: 03394-2016 **INVESTIGATOR:** Vincent Spezzo

PROJECT TITLE: Using the ACES to Determine Developmental Focus for Online Course Instructors

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INSTITUTIONAL REVIEW BOARD DETERMINATION:

This research protocol is **exempt** from Institutional Review Board (IRB) oversight under Exemption **Category 2**. You may begin your study immediately. If the nature of the research project changes such that exemption criteria may no longer apply, please consult with the IRB Administrator (irb@valdosta.edu) before continuing your research.

ADDITIONAL COMMENTS/SUGGESTIONS:

- *Keep all research data in a securely for a minimum of three years following the completion of your research.*
- *Complete & securely maintain the Research Participant Payment Log.*

☒ ***If this box is checked, please submit any documents you revise to the IRB Administrator at irb@valdosta.edu to ensure an updated record of your exemption.***

Elizabeth W. Olphie *09/01/2016*
Elizabeth W. Olphie, IRB Administrator Date

Thank you for submitting an IRB application.
Please direct questions to irb@valdosta.edu or 229-259-5045.

Revised: 06.02.16

APPENDIX E:

Adult Classroom Environment Scale Scoring

Involvement

Students are often bored in the class (-)

Students often ask the teacher questions

Most students enjoy the class

Most students look forward to the class

Most students in the class pay attention to what the teacher is saying

Most students take part in class discussions

A few students dominate the discussions in class (-)

Affiliation

Students often share their personal experiences during class

The students in the class work well together

The students in the class learn little from one another (-)

The students in the class enjoy working together

Students in the class feel free to disagree with one another

Friendships have developed in the class

Students seldom interact with one another during class (-)

Personal Goal Attainment

The class is flexible enough to meet the needs of individual students

Many students think the class is not relevant to their lives (-)

The teacher expects every student to learn the exact same things (-)

Students in the class can select assignments that are of personal interest to them

Most students in the class achieve their personal learning goals

The teacher tried to find out what individual students want to learn

Students have the opportunity to learn at their own pace

Organization and Clarity

The teacher comes to class prepared

Learning objectives were made clear at the start of the course

The class is well organized

The class lacks a clear sense of direction (-)

The subject matter is adequately covered

Students do not know what is expected of them (-)

Learning activities follow a logical sequence

NOTE: Only those dimensions utilized in this study were included in this scoring section.

Items denoted (-) are reverse scored.